DEEPENING COOPERATION IN IBSA

PERSPECTIVES FROM KEY SECTORS

RIS
Research and Information System
for Developing Countries
विकासशील देशों की अनुसंधान एवं सूचना प्रणाली

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PREFACE

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Director General, RIS

The global order and cooperation among countries have entered a very uncertain phase. Deeper strains in multilateralism and weakening of institutions seems an irreversible process, at least for now; till the time world is faced with the dangers of the COVID-19 pandemic with countries looking inwards. Some partnerships are rooted in common values and democratic credentials. IBSA is definitely among them. The IBSA Declaration on South-South Cooperation in recent times raises hope and optimism and is a milestone in itself.

IBSA aims at leveraging natural complementarities and collectively pushing for reforms at the global and multilateral institutions. Strong democratic foundations in respective countries offer IBSA unique strength in terms of global leadership. There is need to revisit the foundations of the IBSA partnership and explore new and emerging contours of collaboration towards building a future roadmap for the partnership. This would also strengthen this unique trilateral partnership for global governance and development cooperation.

As is well known, RIS has been associated with the IBSA since its inception. The Institute through the organisation and participation in IBSA Academic Forum meetings has brought out publications on different issues related to IBSA cooperation. RIS was privileged to host the Sixth IBSA Academic Forum in Kochi on 3-4 May 2019 under the guidance of the Ministry of External Affairs, Government of India which ran parallel to the IBSA Sherpas' meeting. The declaration of the Sixth IBSA Academic Forum and other details are presented as part of this Report.

The IBSA Visiting Fellowship Programme at RIS was launched with the support of the Ministry of External Affairs, Government of India in 2016. Under the programme, the Fellowships are given to two research scholars each from the three IBSA partner countries for a period ranging between three to six months.

RIS hosted the second batch of IBSA Fellows during February 2018 to August 2019. They undertook rigorous research on specific issues like IBSA cooperation at the UN, IBSA and issues of Intellectual Property Rights, IBSA and Traditional Medicine and

Healthcare cooperation, Financial Sector Cooperation and Trade in Banking Services, and IBSA Energy Outlook with perspective from Rooftop Solar. RIS also facilitated their field visits and participation in key meetings like the Sixth IBSA Academic Forum.

The present publication contains the research studies undertaken by the visiting IBSA Fellows on the aforesaid themes. It also has a special article contributed by RIS on the IBSA Trust Fund that aims at strengthening in the South-South Cooperation, particularly in the context of SDGs.

We thank Ambassador (Dr) Mohan Kumar, Chairman, RIS for his guidance in bringing out this volume. We also thank Dr Sabyasachi Saha, Assistant Professor; Mr Mahesh C. Arora, Director (F&A) and RIS Publication Team for publication of this volume in an elegant manner.

We hope this Report would be found useful by academics, policymakers and those who are interested in taking forward the IBSA process.

Sachin Chaturvedi

IBSA Declaration on South-South Cooperation

The External Affairs Minister of the Republic of India, Smt. Sushma Swaraj, The Minister of International Relations and Cooperation of the Republic of South Africa, Ms. Lindiwe Sisulu and the Deputy Minister of Foreign Affairs of the Federative Republic of Brazil, Mr. Marcos Bezerra Abbott Galvão, met in Pretoria on 4th June, 2018. The Ministers agreed as under:

Preamble

- IBSA brings together India, Brazil and South Africa, three large democracies and major developing economies from three continents.
- IBSA is bound together by a shared conviction in the universal values of democracy, plurality, diversity, human rights, rule of law and commitment to sustainable development, inclusivity of all communities and gender, and respect for international law.
- IBSA recalls all efforts over the decades to bring about greater solidarity among South-South countries, including the Bandung Conference 1955, NAM 1961, UNCTAD, G-77 grouping, BAPA 1978, Nairobi Declaration 2009.
- IBSA has, over the years, emerged as a grouping supporting welfare and developmental concerns for the Global South, which have been pursued in the spirit of access, equity and inclusion.

- The IBSA's 2007 Tshwane Declaration; 2008 Delhi Declaration and 2010 Brasilia Declaration underscored SSC as a common endeavour of the Global South guided by equality, non-conditionality, non-interference in domestic affairs, and mutual benefit. They also provided the blueprint for IBSA partnership with countries of the South.
- Recalling the commitments and the means of implementation for the development agenda, IBSA stresses the centrality of the SDGs and the Rio principle of Common But Differentiated Responsibilities (CBDR) and respective capabilities.
- IBSA recalls the development commitment enshrined in the 2008 Doha Declaration and of the Monterrey Consensus of 2002 of providing 0.7 percent GNI as ODA by developed countries and the measures contained in the Addis Ababa Action Agenda for making finance available for achieving 2030 Agenda and the Sustainable Development Goals (SDGs).
- IBSA calls upon the global North to honour its ODA commitments fully, scale up existing resources and commit additional resources to provide the necessary means to implement SDGs.
- IBSA reiterates the balanced emphasis on the social, economic, and environmental pillars of sustainable development.
- IBSA recognizes, inter-alia, capacity building, skills and technology transfer, food security and industrialisation as key to sustainable development.

IBSA Mechanism for Development Cooperation

- The IBSA Fund for the Alleviation of Poverty and Hunger was set up with the objective of facilitating the execution of human development projects to advance the fight against poverty and hunger in developing countries and to pioneer and lead by example the SSC agenda by building new partnerships.
- The IBSA Fund is managed by the United Nations Office for South-South Cooperation (UNOSSC), which lends its professional expertise to multiple stakeholders in promoting the development of the Global South.
- With a cumulative contribution of $35mn, IBSA Fund has thus far partnered 19 countries from the Global South for implementing 26 projects over the last decade. 62.4 percent of the IBSA Fund has been devoted to Least Developed Countries (LDCs).
- The IBSA Fund has been recognised for its good work, including through the United Nations South-South Partnership Award 2006; the UN MDG Award 2010 and the South-South and Triangular Cooperation Champions Award 2012.

Principles and basis for South-South Cooperation

- The basic principles of SSC were particularly emphasised in the IBSA Summit Declaration of 2010 in Brasilia. It underscored SSC as a common endeavour of peoples and countries of the South. It outlined IBSA partnership based amongst equals which is guided by principles of respect for national sovereignty; national ownership and independence; equality; non-conditionality; non-interference in domestic affairs; and mutual benefit.
- The Brasilia Declaration of 2010 states that SSC is not aid and developing countries engaged in SSC are not donors and recipients but developing partners.

- IBSA notes the shared histories, understanding and beliefs and developmental experiences, and consequently adheres to the principles of SSC which have been incorporated in IBSA funded projects.
- Solidarity and the spirit of sharing are the primary motivations for SSC.
- IBSA recognises that SSC is voluntary in nature and not obligatory like ODA is.
- SSC is a demand driven process whereby it is the partner countries that determine the priorities in IBSA projects.
- Respect for national sovereignty is at the core of SSC. SSC is about interdependences and not 'new dependencies'. The partner countries themselves initiate, organise and manage SSC activities. IBSA believes that the primary responsibility towards development rests with the States themselves under their ownership and leadership.
- The aim of SSC is to create higher levels of capability and economic opportunity for both the partners. Capacity building and technology transfer continues to drive SSC in the spirit of solidarity among partner countries.
- South-South Cooperation serves as a complement to and not as a substitute for North-South cooperation, in supporting the acceleration of the development agenda.
- IBSA is convinced that SSC is completely different from the North-South/donor-donee cooperation, and that ODA templates are not a good basis for SSC.
- Further, South-South Cooperation does not imply reducing the responsibilities of developed countries with respect to their ODA commitments, new and additional financing, provision of means of implementation to achieve the goals of the Paris Agreement on Climate Change as well as implementation of the SDGs.
- Economic and political non-conditionality is essential and is reflected in the IBSA projects, as clearly demonstrated from the fact that the fiscal independence is maintained by partner countries.
- Sustainable projects under IBSA Fund provide partners with ownership of projects through various capacity building measures. Involvement of relevant stakeholders of partner countries in projects' initiation, implementation and delivery phases is ensured.

Emerging Focus Areas

- IBSA will step up advocacy for reforms of global governance institutions in multilateral fora.
- The 2011 Tshwane Declaration brought people to the centre of the discourse on global governance. The Declaration considered people-centric social policies as the driving mechanism for restructuring the international financial architecture and reforming international organisations, thereby strengthening SSC.
- IBSA is committed to the realisation of the SDGs. In this regard, IBSA considers responsible financing an essential component of development cooperation and would like to underline that such efforts should not potentially hamper the long term interest of partner countries.

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IBSA at the UN Human Rights Council: An Overview

Alice Pulliero*

Introduction

The India-Brazil-South Africa Dialogue Forum – IBSA brings together three eminent countries from the Global South faced with similar challenges in the pursuit of development. With strong democratic foundations, the principles underpinning IBSA emphasize the respect for the Rule of Law, the protection of human rights and the strengthening of multilateralism. After a period of uncertainty concerning the future of IBSA, 2018 marked its 15th anniversary with a new momentum. The timely endeavour to revitalise IBSA reaffirms its fundamental values and original commitments.

Human rights are supposed to have a prominent place within IBSA. At the first IBSA Summit, held in 2006, the UN Human Rights Council – UNHRC had been recently established, and the three IBSA countries were elected to its first cycle of work. The first IBSA Summit Declaration stated that India, Brazil and South Africa shared common visions regarding the promotion and protection of human rights, so the UNHRC would benefit from their coordinated contributions (IBSA, 2006). This paper draws attention to the importance of this multilateral forum, especially when considering the commitment of IBSA to inclusive sustainable development and the well-being of their peoples.

Since its establishment, IBSA has achieved remarkable results. Attention has been given to the successful projects implemented through the IBSA Trust Fund and to the attainments of their sector-based cooperation, but the assessment of their political coordination within multilateral institutions remains to be deepened. With respect to the UNHRC, there are works about IBSA which make reference to their cooperation at the Council (Jardim, 2019; Shongwe, 2014; Long, 2014), and works on the Council that highlight some aspects of the IBSA coalition (Binder

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& Eisentraut, 2019; Jenkins & Mawdsley, 2013; Asano, 2013). There are further works on a single IBSA country at the UNHRC or on particular issues addressed by the three (Komniski, 2017; Jordaan, 2015; Jordaan, 2014; Pai, 2013). Yet, there is a lack of studies focused on the convergence and coordination of India, Brazil and South Africa comprehending the variety of topics and issues addressed by the Council, during all their simultaneous terms, with the aim of strengthening their cooperation. In such a manner, this paper intends to fill this gap.

Even though India, Brazil and South Africa have committed to work together on the promotion and protection of human rights, when considering their performance at the UN Human Rights Council, some questions arise: how was their voting behaviour during their simultaneous terms? To what extent have them actually achieved common positions? How many resolutions have them sponsored together? To what extent have India, Brazil and South Africa manifested mutual support by co-sponsoring resolutions? Which are the main topics of convergence or disagreement among them and how could they enhance their cooperation?

In order to respond to those questions, this research does not aim to develop a comprehensive analysis on human rights concepts or theories. Otherwise, it is particularly focused on the convergence and coordination of IBSA on the topics and issues addressed by the Council. For this purpose, the study was carried out through document analysis and interviews[1], covering from the 1st Regular Session of the Council, in 2006, until its 40th Regular Session, in 2019, including the special sessions. The following section provides the background of the study. Section 3 presents the voting behaviour of India, Brazil and South Africa considering the resolutions and decisions adopted by vote during their simultaneous terms. Section 4 makes an assessment of their mutual support in sponsoring and co-sponsoring resolutions. The final section is a general conclusion on their performance at the Council so far and points out future prospects.

Background

IBSA was established in 2003 as a mechanism for coordination among three major multicultural democracies in the developing world. Within the framework of South-South Cooperation, the three countries decided to deepen their ties in various areas and bring their voice together on specific global issues, with the aim of strengthening the relations among themselves and adding weight to their common perspectives in the international system.

Despite their heterogeneity and differences, India, Brazil and South Africa have repeatedly asserted their similarities and shared values, especially democracy. In fact, common ideas and principles have shaped the discourse of the IBSA coalition and their strategy in global institutions, which can be noticed by their claims and commitments to promoting peace, security, human rights and sustainable development, as well as to pursue multilateral solutions to international problems (Flames, 2009).

The IBSA Forum comprises sector-based cooperation in a wide range of topics, such as agriculture, defence, energy, health, science and technology, as well as initiatives to improve people-to-people interaction, engaging academics, business people and civil society. Besides, they have created the IBSA Facility for the Alleviation of Poverty and Hunger, a Trust Fund that supports replicable projects with other developing countries taking into account their national priorities and the IBSA best practices.

With respect to their political coordination, India, Brazil and South Africa have been committed to the construction of a new international architecture, which is projected to be more democratic and representative of the developing countries' aspirations.

They have affirmed that global issues need to be addressed with effective and solidary international cooperation, always respecting the sovereignty of states. They have stressed that success in globalisation with equity requires good governance, both at the national and international levels, so external factors would have become critical in determining the success or failure of achieving sustainable development (IBSA, 2003).

For this reason, they have traditionally recognised the importance of strengthening multilateral institutions, mainly the United Nations, and have been strongly committed to reform the UN Security Council – UNSC, prioritising the exercise of diplomacy to maintain international peace and security (IBSA, 2003). As eminent democracies from the developing world, they have shared the perception that the global order needs to become more inclusive, and this synergy could enhance their potential to cooperate in pursuit of the interests of their regions and those of the broader South. India, Brazil and South Africa are not able to promote meaningful changes in the global order on their own, but they can influence the international system if they join efforts.

As Andrew Hurrel points out, the advantages provided by multilateralism to intermediate States are manifold: institutions constrain the freedom of the most powerful through established rules and procedures; they promote political space for building new coalitions on themes of mutual interest; and they provide space for the weaker voices to be heard and gain political support (Hurrel, 2000). Thus, acting together in multilateral fora is highly strategic for India, Brazil and South Africa, as they can maximise their individual foreign policy stances, adding weight to their common views and values (Hirst, 2013).

India, Brazil and South Africa have been deeply engaged in the pursuit of development and their trilateral partnership is an aspect of their broader strategies. In accordance with the Declaration on the Right to Development, the IBSA countries recognise that development is a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the well-being of all individuals. Once the human person is considered the central subject of the development process, development becomes intrinsically related to human rights. The Declaration proclaims that the right to development is an inalienable human right "by virtue of which every human person is entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realised" (DRD, 1986).

In this context, IBSA's democratic credentials should be an asset. Civil rights and political freedoms are fundamental principles without which the effective protection and realisation of human rights are not feasible. As the Leaders of State and Government expressed in the Tshwane Declaration, the strength of IBSA is the shared vision that democracy and development are mutually reinforcing and key to sustainable peace and stability (IBSA, 2011). Democracy is a common value that could enhance IBSA's potential to cooperate especially in the field of human rights.

Democracy and human rights are founded on the principles of individual liberty, accountability, fair and equal representation, inclusion and participation, and non-violent solutions to conflict (Landman, 2018). While modern conceptions of democracy are based on the fundamental ideas of popular sovereignty and collective decision making, human rights have become an accepted legal and normative standard to ensure human dignity (Landman & Carvalho, 2009). In other words, human rights are those rights which are inherent to all human beings, regardless of race, sex, language, religion, political or other opinion, national or social origin, or any other status. Human rights

are very comprehensive, including the right to life and to liberty, the freedom of opinion and expression, the freedom from slavery and torture, as well as economic, social and cultural rights (UDHR, 1948).

The Universal Declaration of Human Rights – UDHR was adopted in 1948 by the UN General Assembly and is considered the foundation of international human rights law. At that time, the United Nations had 58 members, 48 of them voted in favour of the Declaration, including India and Brazil. None of the countries voted against it, two did not vote and eight abstained, including South Africa under the apartheid regime. Once apartheid was over, the South African Bill of Rights was deeply informed by the UDHR.

The International Covenant on Civil and Political Rights – ICCPR and the International Covenant on Economic, Social and Cultural Rights – ICESCR translated most of the principles of the Declaration into legally binding instruments. Both Covenants, together with the UDHR, comprise the so-called International Bill of Human Rights and are widely accepted by the international community: the ICCPR has 173 state parties, and the ICESCR has 171, including all IBSA countries.

According to Landman (2018), democracy seems to be a superior form of government for protecting, respecting and fulfilling human rights obligations. The author argues that respecting human rights would require the states to refrain from violating them, at the same time that would require the states to prevent violations by any other parties, such as private companies, non-governmental organisations, paramilitary groups, or undemocratic movements. Thus, fulfilling human rights would require the states to invest in and implement policies for the progressive realisation of human rights.

Landman (2018) also affirms that there is a strong expectation that the protection of human rights would co-vary with the level of democracy. In his research, he mentions some large scale cross-national comparative analyses that specify civil and political rights protection as the dependent variables and democracy as the independent variable in order to verify the correlation between them. The author concludes that democracy and human rights are indeed positively correlated with one another, but not perfectly so: the positive and significant relationship between them would attest to their complementarity, while the remaining gap would confirm that they are different from one another.

Recalling their democratic roots, India, Brazil and South Africa have repeatedly expressed their willingness to promote and protect human rights in many ways. For instance, the VI Ministerial Commission Meeting, held in Brasilia in 2009, urged the IBSA countries to explore mechanisms to strengthen cooperation in international human rights bodies by developing common initiatives aimed at the promotion and protection of human rights and fundamental freedoms (IBSA, 2009). In addition, IBSA has addressed a variety of country-related issues in their political statements, such as the cases of Sudan, Zimbabwe, Afghanistan, Iraq, Lebanon, Haiti, Iran, Guinea-Bissau, Madagascar and the Middle East.

The VIII IBSA Trilateral Ministerial Commission Meeting, held in Durban in 2017, gave a new impetus to the IBSA Forum. At the occasion, the Ministers reiterated the need for all countries to cooperate in promoting and protecting human rights and fundamental freedoms under the principles of equality and mutual respect. They agreed to strengthen cooperation on issues of common interests both within IBSA and in multilateral fora, including the UNHRC, taking into account the necessity to promote, protect and fulfill human rights in a non-selective, non-politicised and in a constructive manner, without double standards (IBSA, 2017).

In 2018, on the margins of the Seventy-third Session of the UNGA, the IBSA Ministers recalled the celebration of the 70th anniversary of the Universal Declaration of Human Rights – UDHR as an opportunity to emphasize the promotion and protection of human rights and fundamental freedoms through mutual understanding, dialogue and cooperation. They reinforced the necessity of technical assistance and capacity building on human rights and agreed to strengthen dialogue in multilateral forums (IBSA, 2018).

The UNHRC is a multilateral forum responsible for strengthening the promotion and protection of human rights worldwide and for addressing situations of human rights violations. Among its procedures and mechanisms, there are the Universal Periodic Review, which regularly assesses the human rights situations in all UN member states; the Advisory Committee, which provides expertise on thematic issues; the Complaint Procedure, which allows individuals and organisations to bring violations to the attention of the Council; and the UN Special Procedures, which includes rapporteurs, representatives, independent experts and working groups that monitor, examine, advise and publicly report on thematic issues or situations in specific countries. The Council is made up of 47 states elected by the UN General Assembly – UNGA for a period of three years, based on equitable geographical distribution.

The Council was created in 2006 to replace the UN Commission on Human Rights. On the occasion, the UNGA Resolution 60/251 reaffirmed that while the significance of national and regional particularities and historical, cultural and religious backgrounds should be taken into consideration, all states should have the duty to promote and protect all human rights and fundamental freedoms, regardless of their political, economic and cultural systems. In accordance with such perspective, the first IBSA Summit Declaration reaffirmed their common vision of universality, indivisibility, interdependence and interrelatedness of all human rights and fundamental freedoms.

The promotion and protection of human rights should be based on cooperation and genuine dialogue, aimed at strengthening the capacity of states to comply with their human rights obligations for the benefit of all human beings. Therefore, showing commitment to human rights from a democratic perspective and defending common positions at the UNHRC should be conceived as a strategy for India, Brazil and South Africa to revitalise IBSA and reaffirm its fundamental principles.

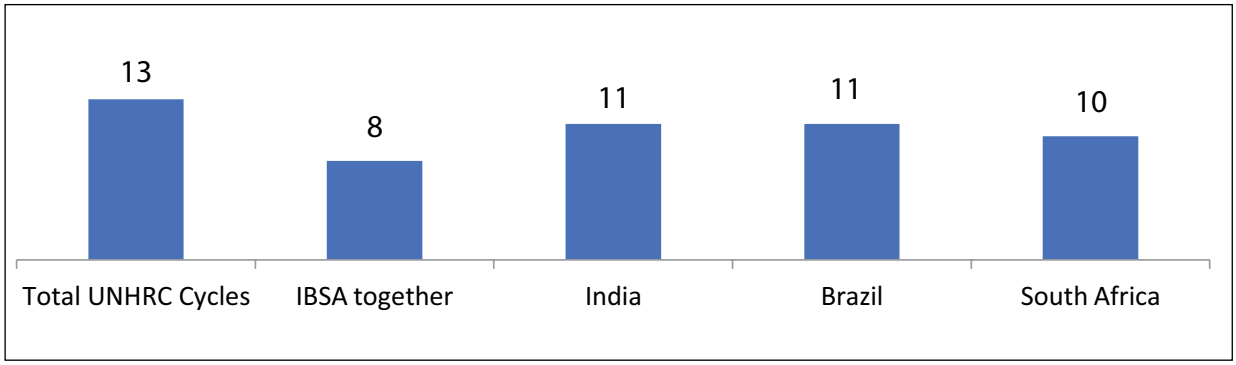
Voting Behaviour of IBSA

Most of the UNHRC resolutions and decisions have been adopted by consensus, around 70 per cent in the considered period. When consensus is not achieved, the specific draft is submitted to the vote of the member states. Regardless of being a member of the Council, any state can be active in coordinating with others to sponsor and co-sponsor resolutions, although the draft will need to be introduced by a member state.

The UNHRC started its 13th annual cycle of work on 1st January 2019. India, Brazil and South Africa had simultaneous terms at the Council for eight cycles, including the 13th. Until 2019, India and Brazil were members in 11 cycles, and South Africa in 10 cycles, which confirms the importance of the UNHRC to the IBSA countries.

During the simultaneous terms of India, Brazil and South Africa, considering until the 40th Regular Session and the 28th Special Session, the UNHRC approved 194 resolutions or decisions by vote. From those, IBSA voted the same way in 129, which means more than 66 per cent of the total. Thus, it seems that India, Brazil and South Africa tended to demonstrate a higher level of convergence than disagreement on the contended issues.

Figure 1: UNHRC Cycles



Source: Author's compilation.

Considering the resolutions or decisions which India, Brazil and South Africa voted differently, at least two IBSA countries voted the same way in the vast majority of the cases. India and South Africa voted the same way in 14 per cent of the total, Brazil and South Africa in 9 per cent, and India and Brazil in 6 per cent, so the IBSA countries voted totally differently in only 5 per cent of the cases.

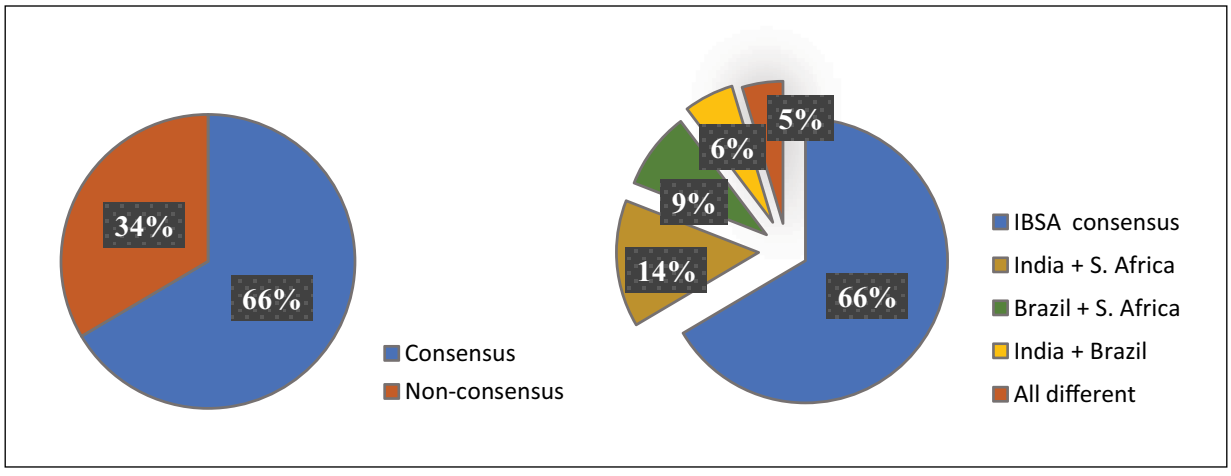
In order to enable the analysis, these resolutions and decisions were classified into two different categories: thematic resolutions and country-related resolutions. In addition, the thematic resolutions were arranged into clusters of similar topics. From the total, 110 were classified as thematic and 84 as country-related.

Thematic Resolutions

When assessing the voting behaviour of India, Brazil and South Africa on thematic resolutions, it comes to the attention that they tended to highly agree on topics related to global governance, development, people living in rural areas, coercion, economic issues and racial discrimination. On the other hand, the IBSA countries tended to diverge on topics related to national security, tradition-related issues and some topics related to fundamental rights. In general, considering the thematic resolutions adopted by vote during their simultaneous terms, India, Brazil and South Africa voted the same way in 70 per cent of the cases.

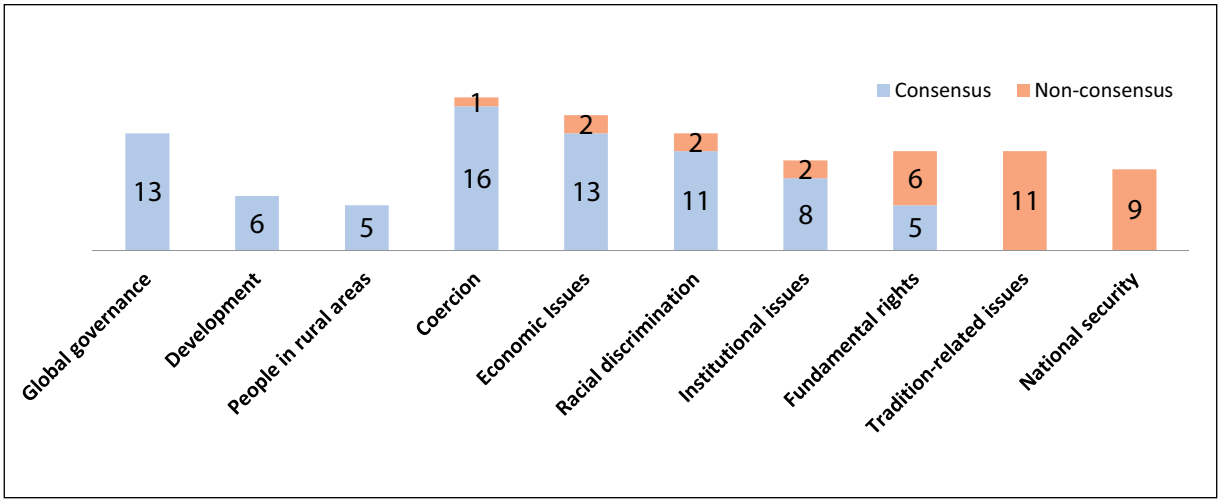
When analysing the topics related to global governance, the set of resolutions on the

Figure 2: IBSA Voting Behaviour



Source: Author's compilation.

Figure 3: Thematic Resolutions



Source: Author's compilation.

"promotion of a democratic and equitable international order" becomes prominent. These resolutions rejected unilateralism and stressed that worldwide economic and social issues, as well as threats to international peace and security, must be addressed through multilateralism. They urged for the promotion of an international order based on inclusion, justice, peace, equality, human dignity, mutual understanding and respect for cultural diversity. India, Brazil and South Africa traditionally voted in favour of these resolutions and voted the same way every time during their simultaneous terms. However, Brazil abstained in the latest one (Resolution 39/4), adopted in 2018 when India was not a member of the Council.

Apart from that, regarding the topics on global governance, it is relevant to mention the set of resolutions on "human rights and international solidarity", which has been adopted by the Council since 2007, always by vote. These resolutions asserted that the widening gap between the economically developed and the developing countries is unsustainable and jeopardizes the realisation of human rights. They affirmed that global challenges must be managed in a way that fairly distributes costs and burdens, so they urged for the increase of official development assistance. They also affirmed that the promotion of international cooperation is a duty of states, and it should be implemented without any conditionality, on the basis of mutual respect, and taking into account national priorities. India, Brazil and South Africa have always voted in favour of these resolutions.

Additionally, the set of resolutions on "the role of good governance in the promotion and protection of human rights" deserves to be mentioned. They have been adopted by the Council since 2008, most of the times by consensus, but the first one was submitted to vote and all IBSA countries voted in its favour. These resolutions emphasized the reinforcing relationship between good governance and human rights, recognising that transparent, responsible, accountable and participatory government is the foundation of good governance.

Among the topics related to development, the set of resolutions on "the right to development" stands out. These resolutions have been adopted by the UNHRC in all its cycles since its establishment and stressed the primary responsibility of states for the creation of national and international conditions favourable to the realisation of the right to

development. These resolutions conceived the right to development as a human right, acknowledging the need to strive for greater acceptance, operationalisation and realisation of the right to development as an integral part of all human rights and fundamental freedoms. The resolutions on the right to development are of mutual interest of India, Brazil and South Africa, so apart from traditionally voting in favour, the IBSA countries have demonstrated a higher level of commitment to them, as will be seen in the next section.

Furthermore, it is relevant to mention that India, Brazil and South Africa voted in favour of a resolution on "globalisation and its impact on the full enjoyment of all human rights", which recognised that, while globalisation offers new perspectives for the integration of developing countries into the world economy, these countries face special difficulties in overcoming the challenges of globalisation, and the least developed countries have remained marginalized in this process. The resolution stressed the need to broaden and strengthen the full and effective participation of developing countries in international economic decision-making and norm-setting with a view to ensuring equitable distribution of growth and gains.

In the cluster related to people living in rural areas, there is a set of resolutions on the "promotion and protection of the human rights of peasants and other people working in rural areas". These resolutions recognised that livelihoods in rural areas are disproportionately affected by poverty, climate change and lack of access to land, water, development and scientific progress. They also recognised the important contribution of peasants and other people working in rural areas to the fight against hunger and the preservation of biodiversity, so they urged states to respect, promote, protect and fulfil the human rights of these people and stressed for the adoption of a United Nations declaration on the matter. At the Council, India, Brazil and especially South Africa had been engaged with this topic and always voted in favour of these resolutions. However, when the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas was finally adopted in 2018 (Resolution 39/12), Brazil abstained.

Still in the field of rural issues, the UNHRC has adopted resolutions on "the right to food" every year since 2007. Most of these resolutions were adopted by consensus, but when some of them were submitted to vote, the IBSA countries have always voted in favour. These resolutions recognised that, despite the efforts made and the positive results achieved, the problems of hunger, food insecurity and malnutrition remain massive. They also recognised the importance of smallholder and subsistence farmers in developing countries, including women and indigenous communities, in ensuring food security, reducing poverty and preserving ecosystems. The resolutions on "the right to food" affirmed that any plan for addressing food security challenges must be nationally articulated, designed, owned and led, and built in consultation with all key stakeholders. Also, they urged for the elimination of distortions in the agricultural trading system.

With respect to the topics related to coercion, the set of resolutions on "human rights and unilateral coercive measures" has been adopted by the UNHRC since 2007, always by vote. These resolutions stressed that unilateral coercive measures are contrary to international law, international humanitarian law, the Charter of the United Nations and the norms and principles governing peaceful relations among states. They affirmed that unilateral coercive measures are a major obstacle to the implementation of the Declaration on the Right to Development, and urged all states to stop adopting or implementing these measures, especially those of a coercive nature with extraterritorial effects, which create obstacles to trade relations among states. From the

beginning, India, Brazil and South Africa repeatedly voted in favour of these resolutions, but Brazil has recently changed its position, as the country abstained in 2018 and voted against it in 2019.

Another relevant topic related to coercion is the set of resolutions on "human rights and the regulation of civilian acquisition, possession and use of firearms", which recognised that hundreds of thousands of human beings, including women and children, have their right to life and security negatively affected by the misuse of firearms. The resolutions urged all states to take appropriate legislative, administrative and other measures in order to ensure that civilian acquisition, possession and use of firearms are effectively regulated. So far, India, Brazil and South Africa have voted in favour of these resolutions.

Still in the field of coercion, it is important to mention the set of resolutions on "the use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination", which condemned any State that permits or tolerates the recruitment, financing, training, assembly, transit or use of mercenaries; and the set of resolutions on the "open-ended intergovernmental working group to consider the possibility of elaborating an international regulatory framework on the regulation, monitoring and oversight of the activities of private military and security companies", which recognised the need to protect human rights and ensure accountability for violations and abuses related to the activities of private military and security companies. India, Brazil and South Africa have always voted in favour of these resolutions.

With regard to economic issues, the topic of foreign debt has been addressed by the Council since 2006, mainly through the set of resolutions on "the effects of foreign debt and other related international financial obligations of states on the full enjoyment of all human rights, particularly economic, social and cultural rights". These resolutions argued that the debt burden faced by the most indebted developing countries, in particular the least developed ones, has severely constrained their capacity to promote social development and to provide the realisation of economic, social and cultural rights. They affirmed that debt relief could play a key role in liberating resources that should be directed to achieving sustainable growth and development. These resolutions have always been submitted to vote and India, Brazil and South Africa traditionally voted in favour of them. However, Brazil has changed its position and started voting against them since 2017.

Additionally, there is the set of resolutions on "the negative impact of the non-repatriation of funds of illicit origin to the countries of origin on the enjoyment of human rights, and the importance of improving international cooperation". These resolutions recognised that the flows of funds of illicit origin jeopardize the realisation of human rights, in particular the right to development, and undermines the values of democracy, the Rule of Law and morality. They urged the states to ensure the prompt and unconditional repatriation of funds of illicit origin to the countries of origin, and to commit themselves to tackle the problem of illicit financial flows. India, Brazil and South Africa have always voted in favor of these resolutions.

It is relevant to highlight that the UNHRC held a Special Session on the global economic and financial crises on February 2009. At the occasion, the Council approved a resolution on "the impact of the global economic and financial crises on the universal realisation and effective enjoyment of human rights", which recognised that the global crises have led to difficulties in foreign indebtedness and that the universal realisation and effective enjoyment of human rights are challenged due to multiple and interrelated global economic and financial crises. The resolution underlined that the crises

do not diminish the responsibility of national authorities and the international community in the realisation of human rights and urged the states to assist the most vulnerable in this regard. More than voting in favour, India, Brazil and South Africa sponsored or co-sponsored this resolution.

On the subject of racial discrimination, the set of resolutions called "from rhetoric to reality: a global call for concrete action against racism, racial discrimination, xenophobia and related intolerance" stands out. These resolutions underscored the importance of political will to eliminate all forms of racism, racial discrimination, xenophobia and related intolerance, and urged all states to take decisive steps towards the implementation of the Durban Declaration and Programme of Action. The first of these resolutions, affirmed the absolute conviction that the failure by states to translate the Durban commitments into concrete action and tangible results would be attributable to a lack of political will. The Resolution 6/22 also deplored the increase in xenophobic and racial tendencies in certain regions of the world, particularly towards migrants, refugees, asylum-seekers, people of African and Asian descent, as well as national and ethnic minorities. This resolution was adopted by vote in 2007 and Brazil abstained. From then on, all IBSA countries have voted in favour of these resolutions.

Another important set of resolutions addressing racism is the "elaboration of international complementary standards to the International Convention on the Elimination of All Forms of Racial Discrimination – ICERD", which advocated for the adoption of complementary standards whether in the form of a convention or as additional protocol(s) to the ICERD, filling the existing gaps and providing new normative standards aimed at combating all forms of contemporary racism, including incitement to racial and religious hatred. All IBSA countries traditionally voted in favour of these resolutions, but in the latest one (Resolution 34/36), India abstained.

Apart from this particular variant, it can be noted that during the simultaneous terms of IBSA countries, the Council adopted by vote other resolutions or decisions related to racism, as the implementation of the Durban Declaration and Plan of Action (Decision 3/103 and Resolution 34/34); the preparations for the Durban Review Conference (resolutions 3/2 and 6/23); the promotion of racial and religious tolerance (Decision 1/107) and the people of African descent in the diaspora (Resolution 30/17). India, Brazil and South Africa voted in favour of all these resolutions and decisions.

The cluster related to institutional issues includes resolutions and decisions on cooperation and procedural matters. Most of the resolutions and decision on these topics have been adopted by consensus, but some of them were submitted to vote during the simultaneous terms of India, Brazil and South Africa. The procedural resolutions include the review of mandates of the Council (Resolution 2/1), the composition of the staff of the Office of the United Nations High Commissioner for Human Rights (resolutions 7/2; 10/5; 13/1; 28/1 and 36/1); and the publication of reports of the Sub Commission on the Promotion and Protection of Human Rights (Decision 10/117). The IBSA countries voted in favour of all resolutions, except the Decision 10/117, which India and Brazil voted against.

The Council adopted by vote a resolution on "the enhancement of international cooperation in the field of human rights" (Resolution 35/8), which all IBSA countries voted in favour; and a resolution on "cooperation with the United Nations, its representatives and mechanisms in the field of human rights" (Resolution 36/21), which India and South Africa abstained. The later resolution expressed serious concern at the acts of intimidation and reprisal by states and non-state actors against individuals and groups who cooperate with the United Nations in the

field of human rights, and reaffirmed the right of everyone to unhindered access to the human rights mechanisms.

Amongst the issues related to fundamental rights, the UNHRC adopted resolutions on the freedom of opinion and expression, which reaffirmed the right of everyone to hold opinions without interference, as well as the rights to freedom of expression, thought, conscience and religion; the right of peaceful assembly and association; and the right to take part in the conduct of public affairs. Most of these resolutions were adopted by consensus, and when the Resolution 7/36 on the "mandate of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression" was submitted to vote, the IBSA countries voted in favour.

The Council has adopted a set of resolutions on "the promotion and protection of human rights in the context of peaceful protests", which recalled that states have the responsibility to prevent human rights violations in the context of peaceful protests, such as extrajudicial, summary or arbitrary executions; arbitrary arrest and detention; enforced disappearances; torture and other cruel, inhuman or degrading treatment or punishment. These resolutions urged states to ensure that national legislation, policies and practices are in compliance with international human rights law. Most of these resolutions were adopted by consensus, but when they were submitted to vote, the IBSA countries voted differently. In 2014, Brazil voted in favour, while India and South Africa voted against the Resolution 25/38. In 2016, when Brazil was not a member of the Council, India voted in favour of the Resolution 31/37 and South Africa abstained.

The set of resolutions on "human rights, democracy and the rule of law" has been adopted by the Council since 2012, whether by vote or consensus. These resolutions affirmed that democracy is based on the freely expressed will of people to determine their own political, economic, social and cultural systems and their full participation in all aspects of their lives. They also affirmed that, while democracies share common features, there is no single model of democracy, so it is necessary to ensure the respect for the sovereignty of states and the right to self-determination. In 2015, the Resolution 28/14 established a forum on human rights, democracy and the Rule of Law to provide a platform for promoting dialogue and cooperation on this topic. India and Brazil voted in favour of this resolution and South Africa abstained.

Another set of resolutions addressed by the Council related to fundamental freedoms is the "integrity of the judicial system", which urged states to ensure the independence and integrity of the Judiciary. These resolutions reaffirmed that every person is entitled to a fair and public hearing by a competent, independent and impartial tribunal duly established by law, and that every person is entitled to the presumption of innocence until proved guilty according to law. Most of these resolutions were adopted by consensus. When some of them were submitted to vote, India, Brazil and South Africa voted in favour.

Furthermore, the UNHRC has addressed the topic of human rights and business enterprises in many resolutions, most of them adopted by consensus. The Resolution 26/9 on the "elaboration of an international legally binding instrument on transnational corporations and other business enterprises with respect to human rights" decided to establish an open-ended intergovernmental working group on the subject, with the aim of elaborating an international legally binding instrument to regulate the activities of transnational corporations and other business enterprises in international human rights law. India and South Africa voted in favour of this resolution, while Brazil abstained.

Still in the field of fundamental rights, it is relevant to include the set of resolutions on the

"promotion of the right of peoples to peace", which affirmed that all states should settle their international disputes by peaceful means in such a manner that international peace, security and justice are not endangered. It recalled that every person is entitled to a social and international order in which the rights and freedoms of the Universal Declaration of Human Rights can be fully realised. In the beginning, Brazil and South Africa voted in favor of these resolutions, while India abstained (resolutions 8/9; 11/4 and 14/3). In 2014, India changed its position so all IBSA countries have voted together from then on (resolutions 27/17; 30/12 and 35/4). In 2016, when Brazil was not a member, India and South Africa voted in favor of the "Declaration on the Right to Peace" (Resolution 32/28).

With respect to tradition-related issues, the Council has adopted a variety of resolutions on the topic of religion, most of them by consensus. Even so, the set of resolutions on "combating defamation of religions" was always submitted to vote. These resolutions stressed that defamation of religions is a serious affront to human dignity and leads to incitement of religious hatred and violence. India and Brazil have always abstained, and South Africa has always voted in favour of these resolutions, so the IBSA countries have always voted differently (resolutions 4/9; 7/19; 10/22 and 13/16). The IBSA countries have also diverged on the Resolution 6/37 on the "elimination of all forms of intolerance and of discrimination based on religion or belief", which India and Brazil voted in favour and South Africa Abstained. Besides, they voted differently on the Resolution 10/25 on "discrimination based on religion or belief and its impact on the enjoyment of economic, social and cultural rights", which India and Brazil voted in favour and South Africa voted against.

Another topic addressed by the UNHRC on which India, Brazil and South Africa tend to highly diverge, at least in the considered period, is the "protection of the family". These resolutions affirmed that the family is the natural and fundamental group unit of society and should be afforded the necessary protection and assistance so that it can fully assume its responsibilities within the community. Regarding the Resolution 26/11 on the "protection of the family" and the Resolution 35/13 on the "protection of the family: role of the family in supporting the protection and promotion of human rights of older persons", India and South Africa voted in favour and Brazil abstained. With respect to the Resolution 29/22 on the "protection of the family: contribution of the family to the realisation of the right to an adequate standard of living for its members, particularly through its role in poverty eradication and achieving sustainable development", India voted in favour, South Africa voted against and Brazil abstained.

Apart from that, the IBSA countries have hitherto diverged on the topic of sexual orientation and gender identity. The Resolution 27/32 on "human rights, sexual orientation and gender identity" expressed grave concern at acts of violence and discrimination committed against individuals because of their sexual orientation and gender identity in all regions of the world. Brazil and South Africa voted in favour of this resolution and India abstained. In 2011, when only Brazil was an IBSA member of the Council, the country voted in favour of the Resolution 17/19. In 2016, when India and South Africa were members, both of the countries abstained on the Resolution 32/2 on the "protection against violence and discrimination based on sexual orientation and gender identity".

One more topic of divergence among the IBSA countries is the set of resolutions on "promoting human rights and fundamental freedoms through a better understanding of traditional values of humankind", which affirmed that all cultures and civilisations share a common set of values in their traditions,

customs, religions and beliefs that belong to humankind in its entirety, and that those values have made an important contribution to the development of human rights norms and standards. India and South Africa voted in favour of the Resolution 12/21 on the matter, while Brazil abstained. In 2011, Brazil also abstained on the Resolution 16/3 and, in 2012, India also voted in favour of the Resolution 21/3, both of them on the same subject.

The last cluster of thematic resolutions is related to national security. In this regard, the set of resolutions on "the question of death penalty" stands out. They are traditionally submitted to vote and the IBSA countries have always diverged on the subject. These resolutions deplored use of the death penalty and called upon the states to accede to or ratify the Second Optional Protocol to the International Covenant on Civil and Political Rights, which aims at the abolition of the death penalty. Brazil and South Africa have always voted in favour of these resolutions (both states are parties to the referred Optional Protocol), while India has voted against them (resolutions 26/2; 30/5 and 36/17).

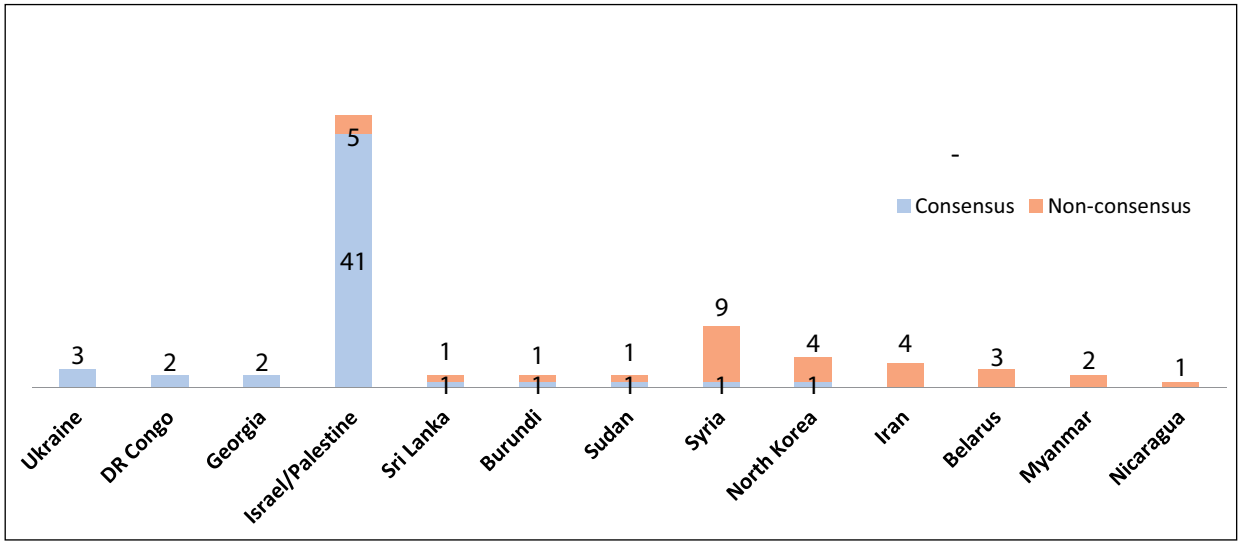
The UNHRC has adopted a variety of resolutions on the issue of torture, the vast majority by consensus. However, the Resolution 10/24 on "torture and other cruel, inhuman or degrading treatment or punishment: the role and responsibility of medical and other health personnel" was submitted to vote. Brazil and South Africa voted in favour, while India abstained. This resolution urged states to provide all persons deprived of their liberty with protection of their physical and mental health, and to ensure that all medical and other health personnel may fulfill their duty to report or denounce acts of torture without fear of retribution or harassment. The resolution called upon states to become parties to the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment – CAT, and to ratify its Optional Protocol. Brazil and South Africa are parties to the CAT.

The issue of terrorism is also a matter of divergence. The set of resolutions on the "effects of terrorism on the enjoyment of human rights" unequivocally condemned all acts, methods and practices of terrorism in all its forms and urged all states to deny all forms of support for terrorist groups, including financial support. At the same time, these resolutions recognised that countering terrorism and protecting human rights are not conflicting but complementary and mutually reinforcing. These resolutions have been submitted to vote, and India and Brazil voted in favour, while South Africa voted against them (resolutions 28/17 and 34/8).

The Council has adopted resolutions on "ensuring use of remotely piloted aircraft or armed drones in counter-terrorism and military operations in accordance with international law, including international human rights and humanitarian law" (resolutions 25/22 and 28/3). They urged all states to ensure that any measures employed to counter terrorism comply with the principles of precaution, distinction and proportionality, and called upon states to ensure transparency in their records on the use of remotely piloted aircraft or armed drones, as well as to conduct prompt, independent and impartial investigations whenever there are indications of a violation to international law caused by their use. Brazil and South Africa voted in favour of these resolutions, while India abstained.

Finally, it is relevant to mention that the IBSA countries voted differently on the Resolution 30/15 "human rights and preventing and countering violent extremism", which emphasized that there is no justification for violent extremism, whatever the motivation, and reaffirmed the primary responsibility of states in preventing and countering violent extremism and terrorism in all its forms and manifestations. India and Brazil voted in favor of this resolution, while South Africa voted against it.

Figure 4: Country Related Resolutions



Source: Author's compilation.

Country-related Resolutions

With respect to the country-related resolutions adopted by vote during their simultaneous terms, India, Brazil and South Africa tended to highly agree on the cases of Ukraine, the Democratic Republic of the Congo, Georgia and Israel/Palestine. On the contrary, they strongly diverged on resolutions related to Syria, North Korea, Iran, Belarus, Myanmar and Nicaragua. Overall, they voted the same way in 63 per cent of the resolutions on specific countries.

The Resolution 26/3 on "cooperation and assistance to Ukraine in the field of human rights" was adopted by the UNHRC in July 2014, shortly after the annexation of Crimea by the Russian Federation. Later, the Council adopted other resolutions on the subject. This set of resolutions has been always submitted to vote and the IBSA countries have always abstained. These resolutions acknowledged the commitment of the Government of Ukraine to promote and protect human rights, but also expressed deep concern with the activities held by illegal armed groups in the Donetsk and Luhansk regions with external support, as well as with the lack of access of impartial and independent human rights monitors to Crimea. The resolution called upon the Government of Ukraine to continue to investigate and ensure accountability to all alleged human rights violations and abuses, and recognised the need for ongoing reporting on the situation.

The UNHRC has adopted many resolutions on the Democratic Republic of the Congo, most of them by consensus. However, during the simultaneous terms of India, Brazil and South Africa, two resolutions on the country were submitted to vote. The Resolution 10/33 on the "situation of human rights in the Democratic Republic of the Congo and the strengthening of technical cooperation and consultative services" recalled the acts of violence and human rights violations in the country, in particular sexual violence and the recruitment of child soldiers by the militia. It also took note of the reports of seven thematic special procedures on technical assistance to the country. The resolution invited the Democratic Republic of the Congo to keep informing the Council on its human rights situation, and called upon the international community to increase the assistance requested by the country with a view to improving the human rights situation. The Resolution 36/30 on "technical assistance and capacity-building

in the field of human rights in the Democratic Republic of the Congo" expressed deep concern about the continued violations of civil and political rights, particularly the freedoms of expression and peaceful assembly, committed by state actors in the context of important electoral events, and encouraged the country to respect, protect and guarantee all human rights and fundamental freedoms for all. India, Brazil and South Africa voted in favour of these resolutions.

With respect to Georgia, the resolutions 34/37 and 40/28 on "cooperation with Georgia" were submitted to vote during the simultaneous terms of the IBSA countries and all of them abstained. These resolutions expressed deep concern at the repeated denial of access to international and regional monitors, including United Nations human rights mechanisms, to Abkhazia and the Tskhinvali region/ South Ossetia. They denounced human rights violations and called for immediate access for international and regional human rights mechanisms to those regions.

Since the establishment of the UNHRC, issues related to Israel/Palestine have received great attention. Apart from the regular sessions, the Council held eight special sessions on topics related to the conflict. Undoubtedly, this is the case about which the Council has adopted more resolutions, the vast majority by vote. Attention is drawn to a set of resolutions on the "human rights situation in the Occupied Palestinian Territory, including East Jerusalem"; "the right of the Palestinian people to self-determination"; as well as many resolutions on human rights violations emanating from Israeli military attacks and incursions, including the situation in Lebanon. India, Brazil and South Africa have always voted in favour of them.

Still related to the Israel/Palestine conflict, the Council has adopted a set of resolutions on "human rights in the occupied Syrian Golan", which India, Brazil and South Africa had traditionally voted in favour, but Brazil voted against the latest one (Resolution 40/21). Another set of resolutions is related to "Israeli settlements in the Occupied Palestinian Territory, including East Jerusalem, and in the occupied Syrian Golan", which the IBSA countries had also traditionally voted in favour, but Brazil abstained on the latest one (Resolution 40/24). Furthermore, it is relevant to mention the set of resolutions on "ensuring accountability and justice for all violations of international law in the Occupied Palestinian Territory, including East Jerusalem", which South Africa has always voted in favour, India has always abstained and Brazil had traditionally voted in favour, but voted against the latest one (Resolution 40/13).

In 2009, the Council held a Special Session on human rights situation in Sri Lanka and adopted the Resolution S-11/1 on "assistance to Sri Lanka in the promotion and protection of human rights", which condemned the attacks of the Liberation Tigers of Tamil Eelam on the civilian population and emphasized the importance of a political solution to the Sri Lankan conflict, based on cooperation and respect for human rights. India, Brazil and South Africa voted in favour of this resolution. After that, the UNHRC has adopted a set of resolutions on "promoting reconciliation, accountability and human rights in Sri Lanka", some of them by consensus and some by vote. The Resolution 25/1 draws attention to the situation of human rights violations in the country, calling upon the Government to hold accountable those responsible for them and to implement the recommendations of the Office of the High Commissioner. Brazil voted in favour of this resolution, while India and South Africa abstained.

Since 2007, the UNHRC has adopted many resolutions about Burundi, whether by vote or consensus, and held a Special Session on the subject in 2015. During the simultaneous terms of IBSA countries, the Council adopted the Resolution 36/2 on the "mission by the Office

of the United Nations High Commissioner for Human Rights to improve the human rights situation and accountability in Burundi", which expressed concern about the lack of cooperation between the Government of Burundi and the UNHRC Commission of Inquiry, including the denial of entry into the territory. The resolution strongly condemned the human rights violations and abuses committed in Burundi and urged the country to put them to an immediate end. India, Brazil and South Africa voted in favour of this resolution. Besides, at the same Session, the Council adopted the Resolution 36/19 on the "renewal of the mandate of the Commission of Inquiry on Burundi", which Brazil voted in favour, South Africa voted against and India abstained.

A variety of resolutions and decisions on the situation in Sudan has been adopted by the Council since 2006, the vast majority by consensus. Even so, the Decision 2/115 on "Darfur" was submitted to vote and all IBSA countries voted in favour. The decision urged to the implementation of the Darfur Peace Agreement and called upon the parties to put an end to the violations of human rights and international humanitarian law in Darfur. The Resolution 11/10 on the "situation of human rights in the Sudan" acknowledged the progress made in the implementation of the Peace Agreement but recognised that there was more to be done. Brazil voted in favour of this resolution, South Africa voted against it and India abstained.

With respect to the Syrian conflict, the Council has adopted a large number of resolutions that strongly condemn the violations of human rights whether by the Syrian authorities or by extremist groups. The resolutions deplored the killing of civilians and expressed grave concern at the allegations of the use of toxic chemicals in the country. At the same time, they condemned the lack of cooperation by the Syrian authorities with the independent international commission of inquiry. The resolutions urged all parties to the conflict to prevent violations of international humanitarian law and to find a political solution to the conflict. Considering the simultaneous terms of IBSA countries, the UNHRC has adopted 10 resolutions on the Syrian conflict, always by vote. India and South Africa have always abstained on these resolutions, while Brazil has traditionally voted in favour of them, except in 2015, on the Resolution 28/20 on "the continuing grave deterioration of the human rights and humanitarian situation in the Syrian Arab Republic", which the country also abstained.

The UNHRC has adopted resolutions on the "situation of human rights in the Democratic People's Republic of Korea" since 2008, some by consensus and some by vote. This set of resolutions strongly condemned the continuing reports of systematic, widespread and grave violations of civil, political, economic, social and cultural rights in North Korea, including the abduction of foreigners, and urged the Government to ensure the full enjoyment of human rights and fundamental freedoms to its entire population. The resolutions also recognised the precarious humanitarian situation in the country and called upon the Government to ensure the access of humanitarian assistance, as well as to fully cooperate with the Special Rapporteur and enable him to fulfil his mandate. India and South Africa have always abstained on these resolutions. Brazil has traditionally voted in favour of them, except on the Resolution 10/16, which the country also abstained.

With respect to the "situation of human rights in the Islamic Republic of Iran", the UNHRC has adopted a large number of resolutions always by vote. They expressed serious concern about the situation reported by the Special Rapporteur, including the lack of access to the country. They called upon the Government of Iran to cooperate with the Special Rapporteur, allowing him to visit the country and fulfil his mandate. India, Brazil and South Africa have

never voted together on these resolutions. India abstained on the first resolutions, then started voting against them. Brazil voted in favour of the first resolutions, then started abstaining. South Africa traditionally abstained on these resolutions, except in 2016, when the country voted against it.

The UNHRC has also adopted a variety of resolutions on the "situation of human rights in Belarus", always by vote. They strongly condemned the violations of human rights in Belarus, considering them of a systemic and systematic nature, and expressed deep concern at the use of torture in custody, the cases of enforced disappearance of political opponents and the violations of labour rights. These resolutions urged the Government of Belarus to carry out a comprehensive review of relevant legislation, policies, strategies and practices in order to make them consistent with international human rights law. India has always voted against these resolutions; Brazil has always voted in favor of them and South Africa has always abstained.

Since 2007, the UNHRC has adopted resolutions on the situation in Myanmar every year, most of them by consensus. The Resolution 40/29 on the "situation of human rights in Myanmar" was adopted in 2019 by vote, when Brazil and South Africa voted in favour and India abstained. This resolution expressed grave concern at human rights violations and abuses in Myanmar, including the escalation of violence in the Rakhine state. It called upon the Government to ensure the protection of human rights for everyone and to fully cooperate with United Nations mandate holders and human rights mechanisms. Additionally, the Council held a Special Session on the subject in 2017, when adopted the Resolution S-27/1 on the "situation of human rights of Rohingya Muslims and other minorities in Myanmar", which Brazil voted in favour, while India and South Africa abstained.

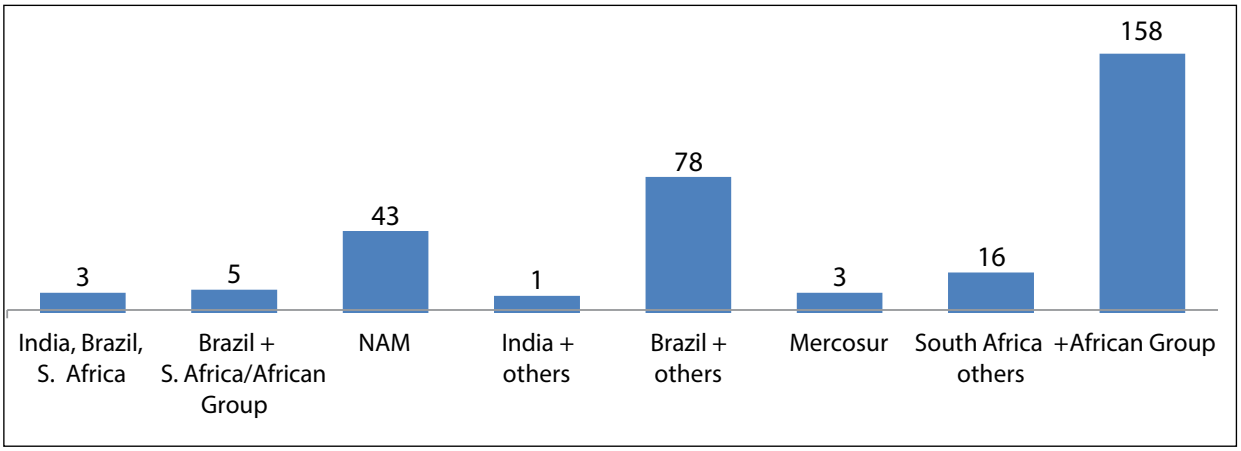
Finally, in its 40th Session, the Council adopted a resolution on the "promotion and protection of human rights in Nicaragua", which expressed grave concern at human rights violations that started in April 2018, such as disproportionate use of force by the police, acts of violence by armed paramilitary groups and arbitrary detentions. The Resolution 40/2 urged the Government to resume its cooperation with UN human right mechanisms, relevant treaty bodies, as well as with the Organization of American States and the Inter-American Commission on Human Rights. Brazil voted in favour of this resolution, while India and South Africa abstained.

IBSA Sponsoring and Co-Sponsoring Resolutions

With the aim of assessing the coordination and mutual support of India, Brazil and South Africa at the UN Human Rights Council, it is relevant to verify to what extent they have sponsored resolutions together and co-sponsored resolutions originally sponsored by any of them. In this regard, it comes to the attention the initiatives of other coalitions which India, Brazil and South Africa are parties to, such as the Non-Aligned Movement – NAM, the Southern Common Market – Mercosur and the Group of African States.

The Non-Aligned Movement is a forum for political coordination and consultation composed of 120 states from the developing world, including India and South Africa, and Brazil is an observer. The Southern Common Market – Mercosur is a regional integration process, initially established by Argentina, Brazil, Paraguay and Uruguay, and subsequently joined by Venezuela, which is suspended since 2016, and Bolivia, which is still complying with the accession procedure. The Group of African States, or the African Group, is one of the United Nations regional groups and is composed of 54 States from

Figure 5: Sponsoring Resolutions



Source: Author's compilation.

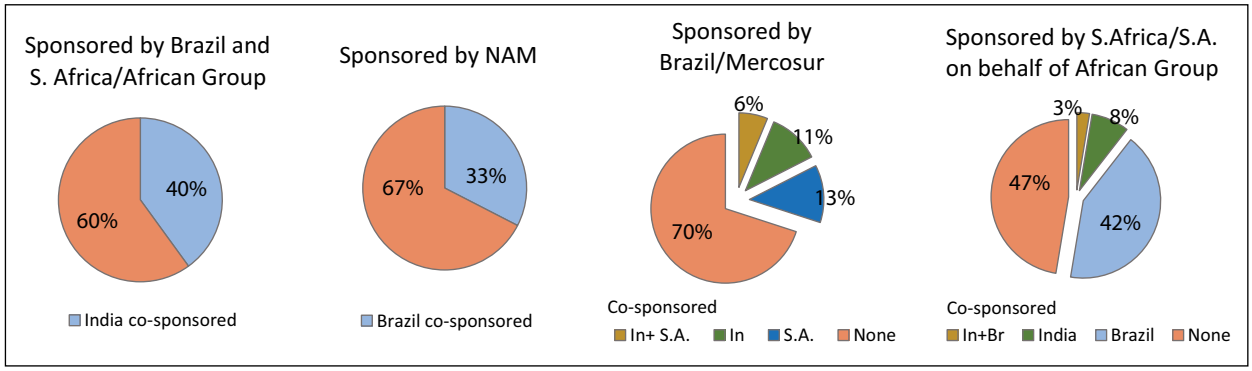
the African continent, including South Africa. These coalitions have been active at the UNHRC and their members have coordinated to sponsor resolutions on behalf of these groups.

Since the establishment of the UNHRC until its 40th Session, India, Brazil and South Africa have sponsored together three resolutions. Brazil and South Africa, considering also Brazil and the African Group, have jointly sponsored five resolutions. The Non-Aligned Movement, bringing together India and South Africa, has sponsored 43 resolutions. Apart from the resolutions sponsored with Brazil and South Africa, India has sponsored another resolution with non-IBSA countries. In addition to the resolutions sponsored with India and South Africa, Brazil has sponsored 78 with different countries, and Mercosur sponsored three. Likewise, South Africa has sponsored 16 resolutions with other countries, and the African Group has sponsored 158 resolutions, 19 of which were sponsored by South Africa on behalf of the group.

When assessing the initiatives of India, Brazil and South Africa to co-sponsor resolutions originally sponsored by any of them, it is observed that most of the times the IBSA countries do not actually demonstrate a high level of mutual support. The following Figure 6 shows the percentage of co-sponsorship from India, Brazil and South Africa in the resolutions sponsored by any of them, including by NAM, Mercosur and by South Africa on behalf of the African Group.

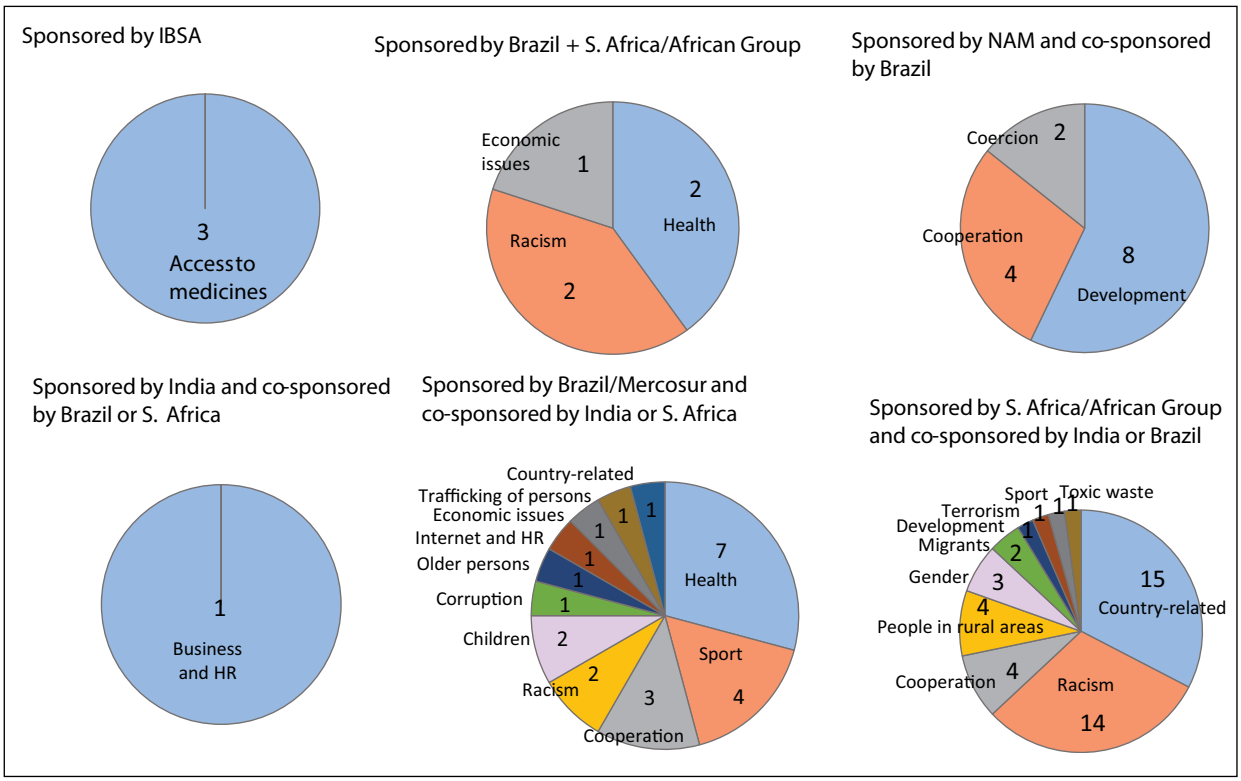
India co-sponsored two of the five resolutions sponsored by Brazil plus South Africa/ African Group, which means 40 per cent. Brazil co-sponsored 14 of the 43 resolutions sponsored

Figure 6: Co-sponsorship from India Brazil and South Africa



Source: Author's compilation.

Figure 7: Mutual Support among IBSA Countries



Source: Author's compilation.

by NAM (33 per cent). India and South Africa have jointly co-sponsored 5 resolutions (6 per cent) of the total of 81 sponsored by Brazil and Mercosur, while India has co-sponsored another nine (11 per cent) and South Africa another 10 (13 per cent) separately. India and Brazil have jointly co-sponsored one resolution (3 per cent) of the total of 35 sponsored by South Africa/ South Africa on behalf of the African Group, while India has co-sponsored another three (8 per cent) and Brazil another 16 (42 per cent) separately.

When assessing the topics in which India, Brazil and South Africa demonstrated any mutual support, including the resolutions sponsored by NAM, Mercosur and the African Group, it comes to the attention the resolutions in the field of health, especially on access to medicines, as well as on racism, development, cooperation, sport, people in rural areas, gender and migrants. The Figure 7 shows the topics which had any mutual support of the IBSA countries, whether by sponsoring together or co-sponsoring resolutions.

India, Brazil and South Africa, have jointly sponsored three resolutions[2] in the field of health, specifically on access to medicines. These resolutions are part of the same set on "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health", which was initially sponsored by Brazil in 2006 (Decision 2/108). From then on, the Council has adopted variations of this resolution focusing on specific topics, such as access to medicines; sports and healthy lifestyles; capacity-building in public health and the implementation of the 2030 Agenda.

Regarding the resolutions that IBSA countries sponsored together, in 2011 India and South Africa along with Egypt joined Brazil as main sponsors of the Resolution 17/14 on "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health in the context of development and access to medicines". In 2013, Indonesia, Senegal and Thailand joined the IBSA countries and Egypt as main sponsors of the Resolution

23/14 on "access to medicines in the context of the right of everyone to the enjoyment of the highest attainable standard of physical and mental health". In 2016, China joined the group to sponsor the Resolution 32/15 on the same subject. These resolutions recalled that states have the responsibility to ensure access to affordable, safe, effective and good quality medicines for all, and encouraged all relevant stakeholders, including pharmaceutical companies, to further collaborate to enable equitable access to them.

Brazil and South Africa have jointly sponsored another two variations of this same set. In 2014, along with Paraguay and Romania, Brazil and South Africa sponsored the Resolution 26/18 on "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health: sport and healthy lifestyles as contributing factors". This resolution recognised the potential of sport to foster development and peace, as well as to promote health and prevent diseases. It called upon States to use sport and major sporting events as an opportunity to promote health and human rights. In 2016, Brazil and South Africa, together with Algeria, China, Egypt, Iran and Pakistan, sponsored the Resolution 32/16 on "promoting the right of everyone to the enjoyment of the highest attainable standard of physical and mental health through enhancing capacity-building in public health", which urged states to strengthen their capacity-building in public health, including training, recruitment and retention of sufficient public health personnel, and improving systems of prevention of infectious diseases.

Still regarding the same set of resolutions, it is relevant to mention that India co-sponsored the Resolution 35/23 on "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health in the implementation of the 2030 Agenda for Sustainable Development", which urged states to achieve the targets of the health-related Sustainable Development Goals and bring their laws, policies and practices fully into compliance with international human rights law. Besides, India and South Africa co-sponsored other resolutions from the same set, originally sponsored by Brazil (resolutions 12/24, 15/22, 24/6 and 33/9).

Apart from that, Brazil and the African Group sponsored together the Resolution 13/27 on "a world of sports free from racism, racial discrimination, xenophobia and related intolerance", which was co-sponsored by India and underlined the importance of combating racism and impunity for racially motivated crimes in sport. Yet in the field of racism, Brazil and the African Group sponsored the Resolution 35/30 on the "consideration of the elaboration of a draft declaration on the promotion and full respect of human rights of people of African descent", which condemed racism, racial discrimination, xenophobia and related intolerance against people of African descent.

Furthermore, as anticipated in section 3, Brazil and the African Group sponsored the Resolution S-10/1 on "the impact of the global economic and financial crises on the universal realisation and effective enjoyment of human rights", which was the outcome of the 10th Special Session of the Council, held in 2009, and was co-sponsored by both India and South Africa.

With respect to the resolutions sponsored by NAM, Brazil co-sponsored eight resolutions of the set on "the right to development", which reaffirms the prominence of this topic for the IBSA countries. Brazil also co-sponsored four resolutions of the set on the "enhancement of international cooperation in the field of human rights", which was mentioned in section 3. In addition, in 2013 and 2015 Brazil has respectively co-sponsored the resolutions 24/14 and 30/2 of the set on "human rights and unilateral coercive measures". In this regard, it is relevant to highlight that the country has

changed its position, since Brazil voted against the latest resolution on the issue (Resolution 40/3).

Apart from the resolutions sponsored with Brazil and South Africa, and to the resolutions sponsored by NAM, India sponsored the Resolution 17/4 on "human rights and transnational corporations and other business enterprises", which was also sponsored by Argentina, Nigeria, Norway and Russia, and co-sponsored by Brazil. This resolution recognised the responsibility of transnational corporations and other business enterprises to respect all human rights, as well as the duty of states to protect individuals against human rights abuses by these corporations.

Regarding the resolutions sponsored by Brazil, apart from those in the field of health, India and South Africa jointly co-sponsored the Resolution 35/9 on the "elimination of discrimination against persons affected by leprosy and their family members", which recalled that leprosy is curable and treatment provided in the early stages can prevent disability; the Resolution 21/20 on the "high-level panel discussion to commemorate the twentieth anniversary of the adoption of the Vienna Declaration and Programme of Action", which reiterated the commitment to the universal promotion and protection of human rights; and the Resolution S-13/1 on "the support of the Human Rights Council to the Recovery Process in Haiti after the Earthquake of January 12, 2010: a Human Rights Approach", which was the outcome of the 13th Special Session of the Council.

India co-sponsored resolutions sponsored by Brazil on the topics of international cooperation in human rights (resolutions 36/29 and 39/18); sports and human rights (Resolution 24/1); human rights on the Internet (Resolution 20/8); trafficking in persons (Decision 13/17); and the global financial crisis (Resolution 12/28). Likewise, South Africa co-sponsored resolutions sponsored by Brazil in the field of sports and human rights (resolutions 18;23; 27/8 and 31/23); the negative impact of corruption on human rights (Resolution 21/13); human rights of older persons (Resolution 21/23); human rights and HIV/Aids (Resolution 12/27); and human rights of children (resolutions 10/8 and 11/7).

Mercosur has sponsored a set of resolutions on "the incompatibility between democracy and racism", two of them co-sponsored by South Africa (resolutions 18/15 and 29/20). This set of resolutions has its roots in the Decision 2/106, sponsored by Brazil in 2006, and affirmed that racism, racial discrimination, xenophobia and related intolerance do not constitute legitimate expressions of opinion, but violations of human rights incompatible with democracy, the Rule of Law and accountable governance.

With respect to the resolutions sponsored by South Africa, India and Brazil jointly co-sponsored the Decision 15/117 on the "Nelson Mandela International Day", which recognised Mandela's leading role in combating racism and promoting tolerance and reconciliation. Later, the Council adopted other two resolutions on the same subject, both sponsored by the African Group and co-sponsored by India or Brazil.

Still regarding the resolutions sponsored by South Africa, India co-sponsored resolutions on discrimination against women and girls in sport (Resolution 40/5) and on the rights of peasants and other people in rural areas (resolutions 36/22 and 39/12). Brazil also co-sponsored resolutions on peasants and other people in rural areas (resolutions 26/26 and 30/13); on sexual orientation and gender identity (Resolution 17/19); on good governance and human rights (resolutions 25/8; 31/14 and 37/6); and on globalisation and human rights (resolution 4/5).

Moreover, considering the resolutions sponsored by the African Group, including those sponsored by South Africa on behalf of the group, India co-sponsored the Resolution 21/18 on "human rights and issues related to terrorist hostage-taking". Brazil co-sponsored

resolutions on the elimination of female genital mutilation (Resolution 38/6); on people of African Descent (resolutions 18/28; 27/25 and 36/23); on migrants (resolutions 11/9 and 17/22); and most of them on racism (resolutions 3/2; 7/34; 14/16; 16/33; 21/30; 21/33; 25/32 and 34/35). Brazil also co-sponsored country-related resolutions sponsored by the African Group, such as the cases of Mali (resolutions 31/28; 34/39; 36/25; 37/39 and 40/26); Libya (resolutions 31/27; 34/38; 37/41 and 40/27); Central African Republic (resolutions 33/27 and 39/19); Côte d'Ivoire (resolutions 23/22 and 32/30); Somalia (Resolution 33/17); Guinea (Resolution 31/29) and the Democratic Republic of the Congo (Resolution 24/27).

Final Considerations

India, Brazil and South Africa have demonstrated a significant level of convergence in their voting behaviour at the UN Human Rights Council in the period under consideration, as they voted the same way in 66 per cent of the cases. Although they may not have coordinated their votes, IBSA countries have reached common positions most of the times.

Despite some changes in political positions that were specified, IBSA countries showed a tendency to agree on thematic resolutions related to global governance, development, people living in rural areas, coercion, economic issues and racial discrimination. Their positions have also converged on county-related resolutions on the cases of Ukraine, the Democratic Republic of the Congo, Georgia and Israel/Palestine. On the contrary, they have diverged in the field of national security, tradition-related issues and some topics related to fundamental rights, as well as on the cases of Syria, North Korea, Iran, Belarus, Myanmar and Nicaragua.

When assessing their coordination in sponsoring resolutions, it is observed that India, Brazil and South Africa have sponsored together three resolutions (considering until the 40th Session of the Council), all of them in the field of health, specifically on access to medicines. In this regard, other coalitions which IBSA countries are parties to, as the Non-Aligned Movement, the Southern Common Market and the Group of African States, have demonstrated higher levels of coordination at the Council. In a similar manner, with respect to their initiatives in co-sponsoring resolutions, the IBSA countries have not achieved high levels of mutual support.

Certainly, this is not only due to a lack of coordination, as their national interests are evidently to be taken into consideration when sponsoring and co-sponsoring resolutions and differences among countries will naturally remain. However, if the IBSA coalition is to be strengthened at the UNHRC, it seems to be necessary to improve their coordination on topics of mutual interest. This could be achieved by opening new channels of dialogue among India, Brazil and South Africa, as informal mechanisms for consultations with the aim of enhancing their communication. Also, given their tendency to highly agree on particular themes, the IBSA countries could coordinate to systematically sponsor resolutions on specific issues, thereby conceiving an identity of the group at the Council.

In light of its strong democratic foundations, IBSA should have a leading role in upholding human rights in a people-centred approach to development. Furthermore, IBSA should be committed to promoting and defending multilateralism, especially at a time when the relevance of multilateral institutions has been strongly questioned. As global issues do not respect national borders, international cooperation is increasingly important. If the pursuit of development is the main goal of the international community, it is important to recall that development has become closely intertwined with the establishment of economic, social, cultural and political rights, which ultimately aim at the improvement of the well-being of all individuals.

Endnotes

1. Most of the data was collected from the OHCHR website (www.ohchr.org) and from the UN Human Rights Resolution Portal of the Universal Rights Group Geneva (www.universal-rights.org). The interviews were conducted with representatives of the Brazilian Mission to the UN in Geneva and of the Ministry of External Affairs of India.
2. This paper covers until the 40th Session of the UNHRC, but it is already known that India, Brazil and South Africa sponsored together one more resolution in the field of health at the 41st Session (Resolution 41/10).

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2

IBSA Countries: Joining Forces to Track Biopiracy through the Patent System

Poliana Belisário Zorzal*

Introduction

Countries' biodiversity – which embraces the variety of life from a country, including genes, species, and ecosystems – has been considered as a "natural capital" that keeps the ecosystems functional and economies productive[1]. Natural resources are basic goods which provide means to reduce poverty, develop in a sustainable way and deliver a better quality of life for each human being.

Biological diversity is the basis of agriculture developments as well. Agricultural biodiversity provides not only the current needs of food and income from nations but also raw materials and resources to ensure the future production of food, fuel, fibre and many other kinds of essential resources. The biological diversity in the world can also allow human beings to adapt to changing conditions, including climate change.

Biodiversity contributes in billions to economic profits in economies around the world. However, the economic value and importance of the biodiversity can also be measured by its inappropriate use. The World Bank estimates that crimes affecting natural resources and the environment inflict damage on developing countries worth more than $70 billion a year[2]. Crimes, as well as misappropriation and misuse of biological resources, increase poverty, shrink prosperity, and magnify social and political tensions that undermine healthy communities and strong economies.

In order to protect their natural resources and traditional populations against misappropriation and misuse, IBSA countries have historically joined hands and taken the lead to discuss ways to protect their mega biodiversity in multilateral forums, i.e. the WTO, WHO, FAO and WIPO.

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IBSA countries have positioned themselves towards the protection of its genetic resources (GRs) not only in the national and multilateral context: Biodiversity has been chosen, by the three countries, as a favoured field in the partnership in the IBSA Dialogue Forum. The Brasilia Declaration reiterates the IBSA countries' efforts for the effective implementation of the Convention on Biological Diversity, especially the rights of countries over their own GRs. In this respect, IBSA countries already hold a common position in their search for a multilateral binding agreement[3,4,5] that could help prevent the misappropriation and misuse of the IBSA's national GRs.More than the Brasilia Declaration establishment and the continuous enforcement during the IBSA Summits reaffirming the major priority of biodiversity conservation, as additional measures, the IBSA countries have signed a Memorandum of Understanding (MoU) on cooperation in the field of environment and established the IBSA Trilateral Joint Working Group on Environment.

They have also set their promptitude to work in close cooperation towards an effective South-South Cooperation and triangular cooperation in the Convention on Biological Diversity context. The objective is to foster cooperation and enhance the solidarity and the interdependence of developing countries, in order to improve human well-being, promote development and eradicate poverty. It continues to highlight the intended IBSA Dialogue Forum's function as a platform where national delegates could present a united front to the issue of unequal economic development thought, for example the recognition of the importance of biological diversity in the environment and commodity price fluctuations[6].

Existing intellectual property rights, as patents, can act as tools to legally protect genetic resources (GRs) and to address cases of biopiracy. Despite the existence of national rules establishing domestic mandatory requirements of disclosure the origin of GRs in the IBSA countries in their patent systems, only having national rules can be insufficient when the vulnerability of GRs to be copied and exploited abroad is considered. In this context, international implementation of disclosure requirements (DRs) would provide legal certainty with respect to the rights and interests of indigenous peoples, local communities, governments as well as commercial and non-commercial research involving GRs.

In order to present some alternatives to the challenges regarding the biodiversity protection using DRs through a harmonised international document, some alternatives to cooperation may be considered by IBSA countries' policy-makers and negotiators. Some of these alternatives are presented in the current document, as the establishment of agreements towards IBSA patent offices harmonised guidelines and collaborative researches development.

A unified stand to the three countries in this framework could strengthen their positions during negotiations in the multilateral arena, especially in the relevant forums at the WTO and WIPO, endorsing a common framework for preventing unsustainable use of GRs. Developing common positions and approaches on DRs as those proposed in this study could assemble and strengthen the IBSA countries towards the development of an international effective multilateral framework protecting national GRs against misuse and misappropriation.

IBSA Dialogue Forum: Environmental and Multilateral Cooperation Priorities

IBSA Dialogue Forum provides a framework for trilateral cooperation in areas of synergic interest between India, Brazil and South Africa. The areas of common importance include global issues and common challenges in environmental protection, climate change, agriculture, and food security, as well as to

strengthen the multilateral system and their position in the international forums.

Expressing the cooperative intent of the three countries, in 2003 they signed the Brasilia Declaration which reiterates the 3-countries efforts for the effective implementation of the Convention on Biological Diversity (CBD), especially the rights of countries of origin over their own GRs. "The fair and equitable sharing of benefits derived from the access, use and management of GRs is featured as a means of stimulating socioeconomic development of the IBSA countries." Also, it is seen as a way to add value to the process of biodiversity-based resources in these megadiverse countries. The need to render the relevant parts of the TRIPS Agreement, compatible with the Biological Diversity Convention, is also emphasised in the Brasilia Declaration, as a way to track the misappropriation of GRs by the Intellectual Property (IP) system[7].

The three-countries' environmental and natural resources protection priorities can be observed in all three IBSA Dialogue Forum's fronts of cooperation. Firstly, IBSA countries cooperate as a forum for consultation and coordination on global and regional political issues, such as the WTO/Doha Development Agenda, which includes the need for alignment between the TRIPS Agreement and the CBD and the protection of GRs against misappropriation through the patent system. Secondly, the three countries started their collaboration on concrete areas/projects, through Working Groups such as the IBSA Environment Working Group and six People-to-People Forums, for the common benefit of the three countries. Lastly, IBSA countries have cooperated in assisting other developing countries and least developed countries by taking up projects in priority areas as sustainability in the latter through IBSA Fund[8].

Furthermore, in 2008, IBSA countries have signed a Memorandum of Understanding (MoU) on cooperation in the field of environment. The objective of the MoU was to promote a common beneficial partnership among the three IBSA countries in the field of environmental management and sustainable development[9], with particular focus on issues, such as biodiversity protection.

As a framework for trilateral cooperation amongst the IBSA countries, the MoU highlights, in different sections, the priority to facilitate dialogue and interaction amongst the three countries on global environmental issues and promote cooperation and strengthen the IBSA positions in multilateral arenas. Also, it seeks to cooperate further for strengthening of South-South cooperation on relevant aspects of the CBD and other biodiversity relevant multilateral environmental agreements. Some of the proposed ways would be the exchange of information and views, particularly on the conservation and sustainable use of biological diversity, and the fair and equitable sharing of benefits arising from its utilisation.

Still in 2008, under the Memorandum of Understanding, as an additional Sectorial Cooperation strategy, the IBSA Trilateral Joint Working Group on Environment was established. The objective was to deepen mutual knowledge and exploring common points of interest in the area, as well as working in the implementation of the MoU.

During IBSA Summits, member countries largely focused on expanding the connectivity among themselves, reiterating and reaffirming the major priority areas of cooperation. About the protection of GRs through the patent system and multilateral cooperation between the three partners in the topic, the leaders of the IBSA Forum discussed the topic in a more detailed way at the 1st, 3rd and 5th IBSA Summits.

During the 1st IBSA Summit, held on 13 September, 2006 in Brasilia (Brazil), IBSA authorities have agreed about the importance of the successful conclusion of the Doha Round in the WTO, with the development dimension at the core of its outcome, the

effective implementation of the Convention on Biological Diversity, especially the rights of countries of origin over their own genetic resources as well as the protection of associated traditional knowledge.

On 15 October, 2008, during the 3rd IBSA Summit, in New Delhi (India), the leaders of the IBSA Forum stressed the importance of a timely and successful conclusion of the ongoing negotiations of a legally binding international regime on access to genetic resources and sharing of the benefits derived from their use and associated traditional knowledge (Access Benefit Sharing - ABS). They also recognised the role of IBSA Forum in the context of ABS negotiations, reaffirmed the urgent need for an adequate legal framework at the international level to prevent biopiracy, and to ensure that national rules and regulations on ABS are fully respected across borders, and to recognise the value of biological resources and of traditional knowledge as an additional tool to promote sustainable development.

In the 5th IBSA Summit, on 18 October, 2011 in Pretoria (South Africa) the authorities emphasised, once again, the need for an equitable and balanced international system of rules governing intellectual property, allowing among others, for the protection of indigenous knowledge systems against abuse and for preventing the misappropriation of genetic resources, and associated traditional knowledge.

In 2017, IBSA countries authorities met in the 8th IBSA Trilateral Ministerial Commission and, once again a closer coordination and cooperation among IBSA countries in various multilateral fora, including the WTO and WIPO, was agreed.

Moreover, as a means to reinforce the political positions of mutual interest, IBSA representatives have also been held at the margins of multilateral fora[10], to have the floor and reinforce their common interests. In 2018, the authorities met on United Nations General Assembly margins in New York, on 27 September, 2018, for the 9th IBSA Trilateral Ministerial Commission Meeting, and also the Ministers further agreed to enhance IBSA cooperation at multilateral fora.

IBSA Countries Biodiversity

Biodiversity as such is distributed very unevenly over the world. The main hotspots of biological diversity are estimated to be the source of around 44 per cent of the world's plants and 35 per cent of terrestrial vertebrates in only 1.4 per cent of the land area.[11] The estimated total global species diversity greatly varies between 8 and 50 million.[12,13] However, currently, only approximately 1.9 million different species are known to science.[14,15]

Developing countries are estimated to be home to around 80 per cent of known living organisms.[16] The three IBSA countries are responsible for a considerable part of this natural wealth as they are biodiversity-rich countries which have been considered priority conservation areas around the world. Only for Brazil, the estimation of predicted species is at around 1.9 million species, with an estimated proportion of Brazilian species around 10 per cent of the world's total (between 8.5 to 11.5 per cent)[17]. India, with only 2.4 per cent of the Earth's land area, accounts for 7-8 per cent of the world's recorded species.[18]

IBSA countries are classified as three of the 17 richest countries in biodiversity in the world,[19] and according to Myers et al.[20]'s reference study, at least five of 25 biodiversity hotspot regions are located exclusively in the Indian, Brazilian and South African territories. The three countries are, therefore, source of extremely rich repositories of biological diversity[21], wealth in endemic species and particularly threatened by human activities. In this context, the management of IBSA's natural resources is crucial to protecting not only their own, but also the global biodiversity, as linked systems.

Biological diversity is fundamental to innovation development and the addressing of current and future challenges.[22] The biodiversity richness is specifically convenient for pharmaceutical and biotechnological research and development (R&D) areas,[23] being used during the development of new products, such as medicines, cosmetics and vaccines.

Genetic models found in nature have been widely used during the innovation process, reducing the time and the costs involved until a marketable product. Biodiversity resources and traditional medicines have a role as a noteworthy source for compounds identification in the emerging markets.[24]

In all the three IBSA countries, abundant local natural resources are increasingly leveraged to identify and develop novel technologies,[25] in critical areas, such as health and agriculture. However, when considering the uses of GRs for the development of new technologies, there is an inherent conflict between the providers, as IBSA countries and the developers of these new technologies based on natural resources.[26]

On one hand, many of the natural resources used as a source of inspiration on the development of new technologies originate in the developing world, from mega diverse countries as India, Brazil and South Africa. On the other hand, the industrialised economies have been responsible for adding value on the basis of GRs, through research, development, patent, marketing and so on. Thus, unfortunately, wealth generated exploiting Indian, Brazilian and South African biological resources use to be kept far from the geographical biodiversity origin. Neither they have been used as a way to support the local livelihoods, nor providing business and job creation opportunities.[27]

The Multilateral Intersections of IP and Biodiversity Protection

Biological and genetic resources were recurrently seen as the common heritage of mankind,[28] when the adoption of the Convention on Biological Diversity (CBD) in 1992 finally started to keep this misconception away. The States' sovereignty over their owned genetic resources was reinforced by the obligation of benefit-sharing when commercialised technologies are based on natural resources found and accessed from a specific territory.

Article 16 of the CBD[29] provides that

> "3. Each Contracting Party shall take *legislative, administrative or policy measures*, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, *including technology protected by patents and other intellectual property rights*, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below." (…)
>
> "5. The Contracting Parties, *recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives*."

A long-lasting demand, especially from developing countries, is that where GRs is a basis for research and development and further sought protection by any intellectual property asset, there should be a mechanism to ensure disclosure of the information in this regard.[30] Thus, important discussions towards the protection of GRs using the patent system have been placed in different arenas.

As signatories of the CBD, all parties should ensure the support of their patent systems to the sustainable use of biodiversity and fair and equitable benefit sharing.[31] Though, fair and

equitable benefit sharing under the CBD has not been a fully achieved considering some reasons for this underperformance, the unresolved relationship between the CBD goals and the economic incentives, created by international legal instruments on intellectual property rights (IPRs) under the contexts of the WTO and the WIPO, has been considered as a blockade.

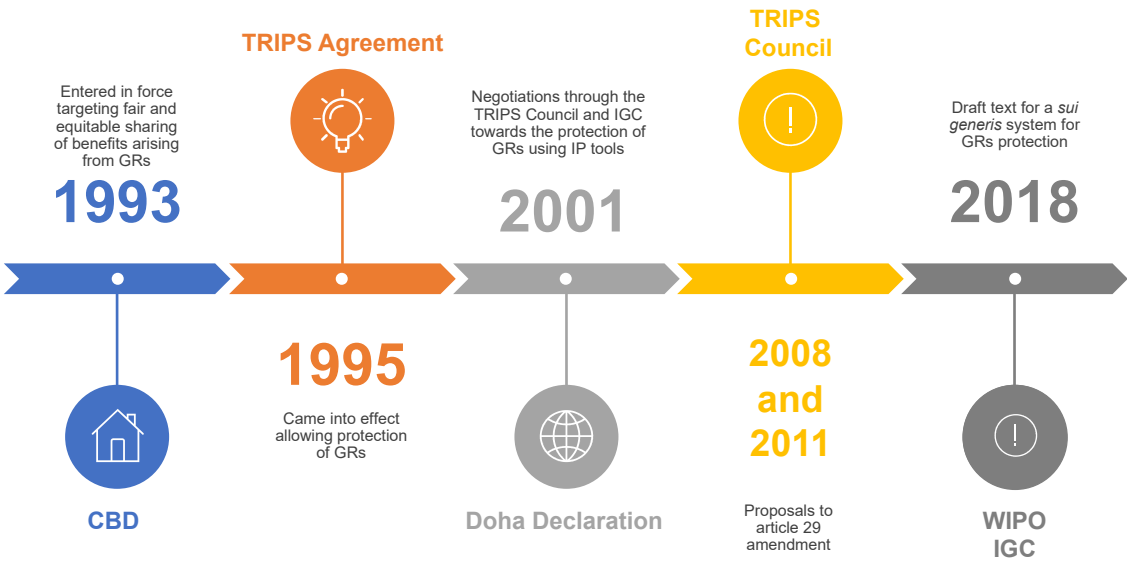
By boosting Parties to reveal the country of origin of GRs in applications for intellectual property rights, the Conference of the Parties to the CBD (COP) established in 2002, further surrounding for the mandatory disclosure requirement. The COP invited Governments to encourage the disclosure of the origin in applications for IPRs when the subject matter of the application concerns or makes use of genetic resources in its development. This would be a way towards the sustainable use of biological diversity and a possible contribution to tracking compliance with prior informed consent and the mutually agreed terms on which access to those resources was granted.[32]

Multilateral organisations, such as WTO and WIPO, have been working, along with other institutions, as forums for the negotiation of multilateral rules on issues relating to the misappropriation of GRs.[33] Nevertheless, the continuing negotiating process shows that it is difficult to reach an agreement on international mandatory rules that address the interests of mega diverse countries, as IBSA countries, around the globe (Figure 01).

The DR as an internationally settled mandatory requirement has been supported by a massive number of countries, though there are differences regarding the interpretation and the course of its application, scope and the consequences of non-compliance among the DRs' supporters. Even considering this noticeable convergence during negotiations in WTO and WIPO, progress is impeded by the firm opposition of some few developed countries.[34]

Attempts to solve the imbalances between GRs' users and providers led developing

Figure 1: General Overview of Historical Facts Related to Multilateral Discussions about Intersections Between Biodiversity and Patent Disclosure Requirements



countries to coalesce around groups while in the negotiations at multilateral organisations. Mainly, these groups are organised according to their positioning and geographical location, such as the Like-Minded Megadiverse Countries (LMMC), the Like-Minded Asia-Pacific Countries (LMAC), the Group of Latin American and Caribbean Countries (LACC), the African Group (AG) and the G77 + China.

India and Brazil have been at the forefront of these efforts to sort imbalances out since it started. In fact, within the scope of multilateral arenas, especially India and Brazil have taken the lead in the multilateral negotiations seeking the establishment of internationally mandatory DRs through a TRIPS agreement amendment and/or a legally binding multilateral treaty.[35]

Wider than the context of discussions at WIPO's and WTO's, the subject is also important in the context of the 2030 Agenda for Sustainable Development.[36] The Sustainable Development Goal (SDG) 2 target 2.5[37] seeks the genetic diversity maintenance and the promotion of access to it, as well as fair and equitable sharing of benefits arising from the utilisation of GRs and associated TK. In addition, SDG 15 target 15.6[38] sets out the objective to protect, restore and promote sustainable use of ecosystems and mandates an appropriate access to natural resources, targeting the promotion of fair and equitable benefit sharing when using TK and GRs. In this regard, a solution to the gap of an internationally recognised disclosure mandatory requirement and, more generally, of an international regime against misappropriation, is also in accordance with the 2030 UN Agenda for Sustainable Development.

Perspectives at the WTO

In the WTO context, discussions about disclosure obligations initially took place in 1995 in the WTO's Committee on Trade and Environment (CTE). After that, in 1999, the negotiations moved on to the Council of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) as part of the built-in review of Article 27.3 (b) of the TRIPS Agreement, which deals with patentability or non-patentability of plant and animal inventions, and the protection of plant varieties.[39]

The relationship between the TRIPS Agreement and the Convention on Biological Diversity was also a central issue in the Doha Round.[40] In this way, in 2001, through Article 19[41] of the Doha Ministerial Declaration, the TRIPS Council was instructed in the continuation of its work programme to review, *inter alia*, the relationship between the TRIPS Agreement and the CBD and the protection of traditional knowledge (TK) and folklore, and other relevant developments by members.[42] The national GRs protection, which is constantly associated with the TK protection, is also included in scope of the review proposal.

In addition to Article 19, the Doha Declaration[43] states that the TRIPS Council should provide revisions to Article 27.3 (b) or the entire TRIPS Agreement, as well as any other implementation issue, covering discussions about: i) the relationship between the TRIPS Agreement and the CBD; ii) protection of traditional knowledge and folklore; iii) and other relevant new developments that member governments raise in the revision of the TRIPS Agreement.

The Declaration was seeking for mutual support of TRIPS Agreement and the CBD, in view of the difficulties encountered by member states while dealing with the commercial use of GRs and/or TK by those other than the custodians, especially when they are the subject of patent applications.[44]

Regarding the complexity of the topic, member states have provided the TRIPS Council with several ideas and proposals to address the issue, through different tools. The most protective of those proposals is the disclosure requirement as a TRIPS obligation. This proposal includes the obligation to disclose the origin or source of GRs and/or TK used in

the development of inventions, a mechanism that is already in place in many national patent systems, as the Brazilian, Indian, and South African ones. However, since once studies have shown national regimes are insufficient to check the global misappropriation of GRs and/or TK,[45,46] member states have been proposing a requirement to the signatory countries in an international level, as a multilateral obligation stated by TRIPS.

The TRIPS Council became the main focus of discussions concerning a legally-binding international instrument that would put the burden on GRs users. Among all international fora involved in GRs governance, the WTO was the only one with a binding dispute settlement mechanism while the Council came with a built-in agenda that included the review of Article 27.3 (b).[47]

However, the proposals in the Council shifted later to the consideration of a possible amendment or an addition to article 29 of the TRIPS Agreement, which deals with the general disclosure obligation imposed on patent applicants.[48] In this new context, a group of developing countries lead by Brazil and India and supported by the African, Caribbean and Pacific Group of States (ACP Group) and the Least developed Countries (LDC) Group, made a proposal for a new article 29bis.[49]

In July 2008, a group of WTO members, the so-called W52 Group (a coalition established by 109 signatory parties, led by Brazil and India and co-sponsored by South Africa) presented to the TRIPS Council a proposition of amendment to the article 29 of the agreement, in the document TN/C/W/52 of 19 July 2008.[50] Through this document, the proponents of a mandatory disclosure requirement in the TRIPS under the Doha Work Programme submitted a TRIPS/CBD disclosure draft modality for consideration by Ministers for TRIPS related issues.

According to the W/52 proposal, the country or the source of GRs should be disclosed in patent applications and members would define in the future the nature and extent of a reference to PIC and ABS, which, may also be raised and shall be considered in the negotiations.[51] With respect to the legal effects of non-compliance, the W/52 proposal states that post grant sanctions may also be raised and should be considered in the negotiations of the text.[52]

The TN/C/W/59 was the latter major proposal along similar lines, which incorporates the mechanism agreed under the Nagoya Protocol to the Convention on Biological Diversity. The proposal submitted by 73 countries, included India, Brazil, and South Africa (in the African Group) in 2011.[53]

As in the W/52 proposal, the new TRIPS article, in the W/59 proposal, would include mandatory requirements for the disclosure of the GRs' origin country in patent applications in the TRIPS parties.[54] Thus, applicants would be required to disclose the source the GRs used in their inventions, evidence of prior informed consent (PIC) and "fair and equitable" benefit-sharing (ABS),[55] when necessary. Therefore, by internalising the amended TRIPS Agreement as proposed in the TN/C/W/59 document, national laws would require inventors to disclose the source of GRs upon the occurrence of a filing for a patent application.

An interesting asset of the W/59 proposal is that not only the provider country should be disclosed but also the source of the GR in the country. Additionally, the document envisions the necessity of a copy of an Internationally Recognised Certificate of Compliance (IRCC) or at least the provision of relevant information as required by the national legislation of the providing country/country of origin. Moreover, according to W/59, the obligation to disclose would be triggered when the subject matter of a patent application involves utilisation of any GR.[56]

With respect to the legal effects of non-compliance on granted patents, W/59 states

that members shall impose post grant sanctions which include administrative/criminal sanctions, fines and adequate compensation for damages or other measures including revocation. Additionally, members shall publish the information disclosed similarly with the patent application or grant.[57]

Although there were positive developments at the WTO through coalition-building in the form of W/52 and W/59, the negotiations have been stuck since 2011.[58] The lack of any kind of agreement in the issue, despite the importance, highlights the controversy of the establishment of a mandatory international disclosure requirement.[59]

Since 2017, India has headed initiatives to revive WTO discussions on issues related to the prevention of biopiracy. In the same year, with a view of brainstorming on this issue and find a way forward, the Centre for WTO Studies, at the Indian Institute of Foreign Trade, New Delhi, organised an International Conference on TRIPS-CBD Linkage. In June 2018, the Government of India, along with the Centre for WTO Studies, Indian Institute of Foreign Trade, and the South Centre, organised the second edition of the International Conference on TRIPS-CBD Linkage in Geneva. Brazil and South Africa also co-sponsored and supported the initiative in order to bring together resource persons, stakeholders and experts from a large number of countries, to brainstorm on the options for energising negotiations on this subject in the WTO.[60]

The main objective of the Conference was to examine the concerns involved and the expressed views on the subject in the TRIPS Council and in other international organisations such as WIPO and the CBD. During the conferences, the involved stakeholders looked at possible ways to revive negotiations on the subject in the WTO and explore the role of regional trading agreements and plurilateral treaty on the subject.[61]

Perspectives at the WIPO

Within WIPO, discussions on a *sui generis* system to protect GRs have been taking place since the year 2000. Discussions at the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) are fairly complex as they are not centred on just one subject. Among the various issues that have been dealt there is the way towards the harmonisation of a mandatory DRs internationally.

The duality between developed and developing countries has been evident during the discussions for the establishment of a general treaty towards all member countries.[62] The key challenge for countries has been to come down to specificities of the IGC mandate, and then to come up with a common position in terms of advancing the core objective of ensuring disclosure requirements within the mandate negotiations.[63]

The IGC has been undertaking text-based negotiations with the objective of reaching agreement on a text(s) of an international legal instrument(s), which will ensure the effective protection of traditional knowledge (TK), traditional cultural expressions (TCEs) and genetic resources (GRs).

The last IGC Sessions, when the GR protection was mainly addressed, were the 35th session –19 to 23 March, 2018 and 36th session–25 to 29 June, 2018. The IGC 35 was the first session under the new mandate for 2018-2019 when key issues related to IP and GRs were discussed, such as objectives of this protection, subject matter, disclosure requirements (including trigger, content of disclosure, exceptions and limitations, and sanctions) and defensive measures.

Further discussions on disclosure requirements took place in an IGC 35 side group meeting. The meeting comprised

around 40 experts, with up to six delegates per region nominated by the member states, as well as two indigenous experts nominated by indigenous peoples participating in the session. Additionally, three *ad hoc* contact groups were established to tackle specific issues during the IGC 35. The contact groups reported back to the plenary on their discussions and suggestions.

Based on the additional discussions, a first revision ("Rev. 1") of the draft text contained in document WIPO/GRTKF/IC/35/4 (Consolidated Document Relating to Intellectual Property and Genetic Resources) was presented to the IGC 35 plenary on 21 March, 2018, and a Rev. 2 document on 23 March, 2018. The Plenary agreed that the "Consolidated Document Relating to Intellectual Property and Genetic Resources Rev. 2", as at the close of the session on 23 March, 2018, should be transmitted to the 36th Session of the IGC, in accordance with the IGC's mandate for 2018-2019 and the work programme for 2018.[64]

On 24 June, 2018, an *ad hoc* expert group on GRs met to address specific legal, policy or technical issues.[65,66] The *ad hoc* expert group addressed, therefore, issues on DRs, as trigger and use of terms – directly based on, utilisation; content and use of terms – source, providing country, country of origin; and, consequences of non-compliance sanctions/remedies.[67]

The *ad hoc* expert group was invited to discuss in parallel sub-issues relating to disclosure requirements, namely trigger, content and consequence of non-compliance. Those deeper discussions could assume the role of subsidising the parties during the general discussions at the IGC, and also presenting some new options to the multilateral harmonisation process.

Regarding trigger, the participants agreed that a relationship or "link" between the subject matter of disclosure (e.g. GRs) and the claimed invention, in order to activate the application of a patent disclosure requirement, was essential. Experts expressed a variety of views, for example, on whether there should be perceived as a broader trigger (i.e. "utilization of") or a narrower trigger (i.e. "directly based on").[68]

To address the content of disclosure, experts commented on whether the aim should be a transparency measure with the objective of mutual supportiveness with other systems, or an ABS compliance measure with the objective of establishing the role of IP offices as checkpoints. As unanimously, the experts understood that the country of origin or source should be required.

However, there was no uniform opinion as to whether any further information would need to be provided by the applicant. On the one hand, the experts presented the importance of not overburdening the patent system and national patent offices and on the other hand, other interests at stake were addressed, as the safeguard of GRs owner's rights without checking if the subject matter of the application had been obtained legally.

About the consequences of non-compliance, a great number of experts opined that, apart from revocation of a granted patent, a third-party dispute mechanism could have a relevant role to promote legal certainty and balanced solutions. Powerful deterrents against misappropriation have been considered as needed to cease GR misappropriation, and the revocation, either pre or post grant consequences should be a measure of last resort.[69]

Following the discussions of the *ad hoc* expert group, the 36th session of the IGC took place, again addressing GRs, from 25 to 29 June, 2018.[70] A Rev. 1 of the "Consolidated Document Relating to Intellectual Property and Genetic Resources" was presented to the plenary on 27 June, 2018, and a Rev. 2 on 29 June, 2018.

During the discussions of the "Consolidated Document Relating to Intellectual Property and Genetic Resources" Rev. 2 there were a number of concerns pointed by Indian, Brazilian and South African groups,[71] but they all agreed that

the Rev. 2 document could be transmitted to IGC 40. Even considering that was not an ideal text, while important subjects as derivatives and digital sequence information were excluded, they supported it in the spirit of good faith to reflect and take on board all of the different positions of Member States,[72]

However, the Delegation of the USA, supported by the Delegation of Japan, considered that Rev. 2 was not an acceptable basis for future work and did not support the transmission of either Rev. 1 or Rev. 2 to IGC 40.

Even in the context which the Member States were not all able to agree on transmission of the Rev. 2 to the next relevant session of the IGC (the IGC 40 in June, 2019),[73,74] the Rev. 2 as prepared and was reflected in the report of IGC 36.[75]

Thus, after the long negotiations held, the United States, along with Canada, Japan, and the Republic of Korea, have conformed a bloc that opposes any mandatory disclosure requirement at that opportunity.[76]

Biodiversity-Related Patent Disclosure Requirements

The implementation of tools to prevent the grant and exploitation of patents on third parties' genetic resources is one of the fundamental issues in the fight against biopiracy. The obligation to disclose the origin or source of a GR can preclude the grant of improper rights to unauthorized parties.[77]

The DR is a part of the usual patent requirement of sufficiency of disclosure, which materializes the principle of reciprocity in the patent system.[78] It is part of the core rationale of all national patent law[79] and in order to meet the requirement, the invention must be described in a way which allows a skilled person to carry it out.[80] When the invention is related to GRs, the patent applicant must include some additional categories of information to meet the requirement,[81] which can include the origin or source of those GRs.

In this sense, if the disclosure of GRs and/or TK source is mandatory in a national rule, the patent applicant is required to reveal it in the patent application form. In this way, the patent system represents, on the one hand, a source of information to track uses of GRs in order to better implement the CBD and on the other hand, represent a check point in order to monitor the appropriation and uses of GRs.[82]

DRs are also crucial to promote ABS tools as the prior informed consent (PIC) and mutually agreed terms (MAT), resulting in compliance of ABS rules. DRs, especially when mandatory, may lead to changes in the procedures and behaviours of patent applicants and inventors, reinforcing the positive effects of ABS rules. Thus, they may also reduce the free-riding incentives to freely obtain a benefit from someone else's genetic source without proper compensation.[83]

Nationally, DRs can be established by many ways and legal rules. Countries around the globe have been chosen mainly between two ways to introduce DRs: through their patent law or through their biodiversity/ABS legislation.[84] India, Brazil and South Africa and many other developing countries,[85] regardless the lack of consensus in respect of an international mandatory DRs in the multilateral arena, have built their own regimes nationally or regionally.

Unfortunately, only national rules can be useless when the global aspect of appropriation of GRs and the territory-restricted patent rights are considered. In this context, international implementation of DRs is hoped as an improvement of legal certainty over respect for the rights and interests for indigenous peoples and local communities, governments and non-commercial and commercial research involving GRs and traditional knowledge.[86]

Alternatives to IBSA Countries' Coordination and Cooperation Towards Common Mandatory Disclosure Requirement

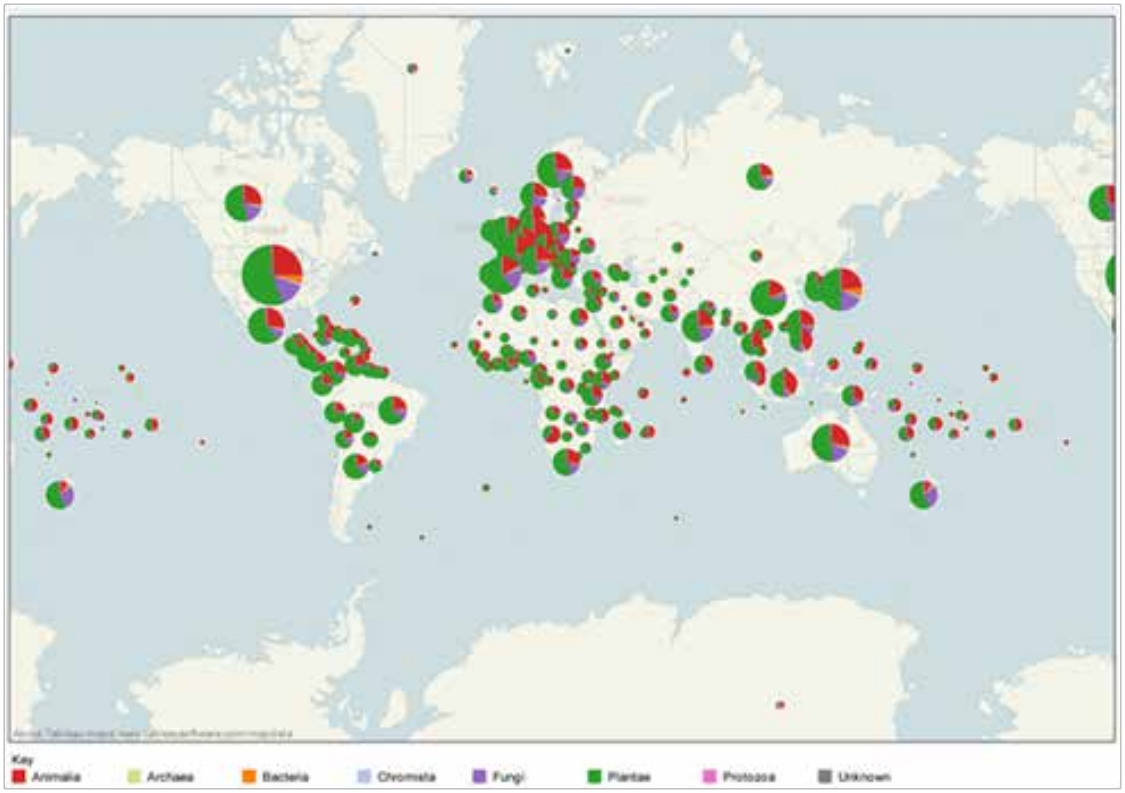
Regrettably, the bottlenecks in establishing a mandatory disclosure requirement at the international level are unlikely to be overcome in the near future.[87] However, while the WIPO IGC, the TRIPS Council and the Nagoya Protocol prolong their negotiations, review processes and designation of checkpoints, cases of misappropriation and biopiracy continue to multiply through time.[88]

The long-lasting international scenario of misappropriation is highlighted in an analysis published by Oldham and others[89] in 2013. The study presented a clear perspective about the geographical distribution of species appearing in patents by kingdom based on available distribution data from Global Biodiversity Information Facility (GBIF).

The study shows clearly that, even considering the fact that developing countries, as IBSA, are the most biodiverse in the world, the number of species in patent applications on developed countries is considerably bigger when compared to developing countries' number of species in patent applications (Figure 02). Many of the developed countries presented in the study do not have a mandatory disclosure requirement established in their national rules, which could be a hint that, for many of those patent applications, cases of misappropriation and biopiracy could have happened.

Also looking for evidence of biodiversity biopiracy in the patent system, a study of López and Páramo presented a sample of patents from the global patent system that could contain evidence on possible cases of biopiracy of selected endemic plants used in Mexican traditional medicine.[91]

Figure 2: Global Distribution of Species in Patents by Kingdom[90]



Further violations of countries' rights to their GR could be prevented by the establishment of a multilateral agreement on mandatory disclosure requirement at either TRIPS Council or/and at the IGC. However, the difficulties to achieve any international harmonisation in the past 20 years of multilateral discussions has resulted in a long overdue negotiation process, which still remains urgently needed.

Working within multilateral forums could remain as the primary option for the negotiation process, as GRs are especially vulnerable to be exploited abroad and its fully international protection cannot be achieved without the participation of as many parties as possible.[92] The negotiation process in the multilateral arena has clear advantages, such as the likelihood of a broader number of members when compared with the one outside it and the technical and financial support of a secretariat. However, the benefits of the negotiation within the multilateralism are fully neutralised when the progress is blocked for few parties, as during the recent negotiations about mandatory disclosure obligation in the IGC, for example.[93]

The absence of concrete outcomes along the trail followed in the last years in the multilateral fora may encourage IBSA countries to consider other alternatives in order to strengthen their position towards the protection of their GRs. Alternative approaches could be assumed in parallel by the three countries while a TRIPS amendment and a *sui generis* treaty to protect GRs are not achieved.

Many approaches have been considered singly by IBSA countries to address the significant gaps in the implementation of IP international rules regarding the misappropriation of GRs. However, a unified stand and political coordination of the three countries outside the multilateral arena could additionally strengthen their positions during negotiations in the relevant forums at the WTO and WIPO, endorsing a common framework according to their own views.

In the context of DRs and IBSA countries, possible approaches for strengthening their common positions towards the development of an effective international mandatory framework for DRs can include altering options for a new binding instrument for mandatory disclosure obligation, including, but not limited to, instruments presenting substantive standards. Some of these alternatives are presented in this study in the following sections.

IBSA Patent Offices Harmonised Guidelines

IBSA countries have already established their national legal frameworks for DRs. Diverse national laws and decrees have been responsible for mandatory regulation for GRs' access and the disclosure of its use while applying for a patent in India, Brazil, and South Africa (Figure 3).

Figure 3: National Laws and Decrees in India, Brazil and South Africa Related to Mandatory DRS for GRS Access and the Disclosure of its Use While Applying for A Patent

India	Brazil	South Africa
ABS Law (2002 Biological Diversity Act) and **Patent Act**	**ABS Law** (Law no 13.123/15 and Decree no 8.772/16)	**Patents Amendment Act 2005** (Act No. 20 of 2005)

Though the earliest regulations in the subject matter have entered in force since the beginning of the 2000's, these rules have been found difficult to navigate by users, considering the broad range of covered activities and the multiple permits required along value chains.[94]

Moreover, while comparing the legal procedures established by the Indian ABS Law and Patent Act, the Brazilian ABS Law and the South African Patent Amendment Act the patent applicant can recognise substantial differences in the DRs regulated in each country. It highlights the difficulties that patent applicants can face while applying for the same

patent in the three different countries – the required procedures to meet the DRs can be very diverse.

Furthermore, when considering international rules as CBD and Nagoya Protocol, the patent offices' procedures should supposedly work in a common way and pattern respecting to DRs. However, the systems are not intercommunicable when comparing the three different approaches.

Currently, the differing legal systems related to DRs operating at the IBSA patent offices lead to differences in the assessment and the level of protection to their own national GRs, as well as the other IBSA countries' and third countries GRs. For example, the Brazilian Patent Office applies the DRs requirement for only Brazilian GRs, which can give a clear example of this lack of uniformity and differences in the level of protection of other countries biodiversity, even considering that, according to the Brazilian ABS law, the DR is mandatory.

Different approaches related to DRs followed by IBSA countries' patent offices highlight a need of some level of homogeneity among their procedures, considering the GRs owners as well as the certainty for applicants acting globally. When applying for patents in different jurisdictions, the differences in the DRs amongst different patent offices result in additional effort and costs for the patent protection seeker. It would mean that while IBSA countries have an amount of different approaches in their national DRs, it can make not only the IBSA's GRs protection unbalanced or even weak between IBSA and among countries outside the group, but it may also lead to loss and uncertainty to patent applicants.

The attempting of alignment between IBSA's patent offices practices and application of similar standards for the DRs could lead to a related and more balanced level of protection for national GRs between the three countries. In addition, in a medium term, the uniformity for the three countries could work as a push for the subsequent join of other countries for the rule harmonisation. In this way, the positive effects of a level of harmonisation between IBSA countries could evolve not only towards the protection of countries where the GRs are from, but also the patent applicants which could expect a level of standardised procedures. In this sense, as final result for some level of procedural uniformity, a legal certainty about her/his invention's protection in all harmonised jurisdictions.

Harmonisation of procedures also facilitates the global protection of intellectual assets, as it simplifies their management and reduces the costs of acquiring and enforcing rights.[95] Harmonisation of practices and procedures among patent offices has been seen as a way for work-sharing enhancement, timely and high-quality search and examination results deliver, and access to patent information in a unified manner in order to promote an efficient, cost-effective and user-friendly international patent landscape.[96]

Some level of harmonisation in the IBSA patent offices procedures regarding the DRs would head a deeper cooperation. The focus of the patent offices' endeavours on patent harmonisation on practices and procedures within the IBSA would have wider benefits, not only regarding GRs protection, but also towards maximising the work-sharing potential within the IBSA patent offices and improving GR-based patent information availability and services.

IBSA patent office's procedures harmonisation regarding the DRs would better align the procedural and administrative matters between the three offices, maximising efficiency. It could even reduce costs by significantly limiting the need to comply with differing substantive and procedural rules and should also permit each patent office to have more certainty about the protection of their biodiversity into the other two offices.

In this direction, IBSA countries could cooperate towards harmonised guidelines among the three patent offices regarding the patent DRs for GRs. The harmonisation achievement certainly would require agreement on some minimum standards between the Indian Patent Office (IPO), the National Institute of Industrial Property (INPI) in Brazil and the Companies and Intellectual Property Commission Department of Trade and Industry (CIPC), in South Africa.

It is a fact that, in order to achieve some degree of harmonisation in the procedures of the three patent offices, it can be a challenge bearing in mind the different national legal frameworks for DRs and the different procedures adopted by the patent offices. Even considering a harmonisation in the scope of the patent offices, the differences in legal systems of each IBSA country and in their patent offices' approaches to DRs could require some additional time and efforts, in order to achieve a common place for all.

Anyhow, a trilateral agreement between the three IBSA patent offices, seeking a sectorial cooperation and minimal harmonisation of procedures could strengthen their position in the international and multilateral regarding a mandatory DR. The common procedures could strengthen convergent approaches while dealing with DRs, establishing a coherent legal and policy framework between IBSA countries, without the necessity of changes in the Patent and Biodiversity's national Laws.

The IBSA patent offices harmonisation is also an option for the three countries to look for normative solutions outside the multilateral fora. Trilateral agreement, even without achieving the ultimate goal of a global mandatory DR, is a great opportunity to generate gravity to the issue. The negotiation and the establishment of an agreement between India, Brazil and South Africa on the topic could add weight to the discussions, not only between them but also internationally. The opposing countries could awake to the importance of discussions in the multilateral forum, once in the starting trilateral agreement they would not have interference. This lack of influence in the IBSA agreement could generate unpredictability for DRs opposing countries, considering the importance of the IBSA countries and, even worse to them, the possibility of adherence of other countries, strengthening a harmonised agreement built previously without their interference.

A Memorandum of Understanding (MoU) could be an option for IBSA countries to start the process of negotiation towards a legally enforceable commitment for some level of DRs' harmonisation between the patent offices. It could express a convergence of will between IBSA, indicating an intended common line of action. Signing an MoU could help the negotiation process, starting with the structure establishment, as a frame for IBSA and the further negotiation mandate.

An MoU could also play important role for setting Working Group. One alternative for a Working Group could be the establishment of a DRs Harmonisation Expert Panel (EP). This body of technical experts could be settled up to explore the potential for harmonising procedural aspects of the DRs during a patent application and granting process among the three patent offices.

The EP could focus its work on what could be done to bring IBSA offices' systems closer together and to reduce the differences in the DRs in the patent application and granting procedures. The EP should endeavour to harmonise patent practices and procedures in the best way considering the different patent and ABS rules in place in the IBSA countries.

Collaborative Researches Development

Whilst the lack of an internationally recognised disclosure obligation against the misappropriation of GRs is not fulfilled, cases of 'biopiracy' may continue to be untraceable and the countries from where GRs have

been accessed will remain deprived of the benefits of their commercial exploitation.[97] As an aggravating factor, analytical evidence on biopiracy of traditional knowledge and biodiversity is scarce[98] and, when the patent system is considered as a source of information the number of studies and analyses are even more limited.

Technical studies regarding to biopiracy cases, expositing patents using IBSA GRs without meeting the ABS rules and/or patent disclosure obligation could be useful, not only to strengthen the necessity of mandatory DRs in the multilateral arenas through actual data, but also for correcting asymmetric relationships in knowledge transactions between countries and economies.[99]

Collaborative researches between IBSA for the development of targeted studies exposing cases of IBSA countries genetic resources misappropriation in applications and/or granted patents would work towards the desired effects. Strengthened research cooperation between the three countries would expose evidence on actual and potential instances of biopiracy around the globe and reinforce the importance of DRs.

Expositing patents using IBSA GRs without meeting the ABS rules and/or patent DRs could also highlight the limitations and problems faced by IBSA countries in identifying, monitoring and studying applications and/or issued patents documents that involve improperly granted rights (because they would not meet patentability criteria) or even because weaken regimes for access to and/or protection of TK and GRs.[100]

In this aspect it is also important to highlight that, even though IBSA are political and economic partners, the research partnership between the three countries has a long way to improve. In this sense, a collaborative research network to monitor and track the IBSA biodiversity uses in the patent system could work as a way to strengthen this collaborative work.

A recent study of Manendra[101] quantifies that IBSA countries are not partners when considering the IBSA research collaboration in Biotechnology with other nations and emphasises the necessity of growing collaboration within IBSA countries. Comparing the 10 countries that each of IBSA countries most frequently interact to, when performing researches in biotechnology, only the interaction between South African researchers with Indians appears in the 10th position. For Brazil, the United States is the main collaborator, in the 1st position with 1127 scientific papers, while India is at 14th place with only 90 articles in co-authorship. For South Africa, United States is once again the top collaborative country with 320 publications and India is found to be the 10th position with 63 publications. In the Indian context, the main collaborator is United States with 1424 papers, with no place within top 15 for South Africa or Brazil.

For India, the Traditional Knowledge Digital Library (TKDL) team has been working in order to help the fulfillment of missing information regarding misappropriation of TK and GRs. From 2009 to 2014, they identified 1155 Patent applications with respect to Indian Systems of Medicine. These patent applications were found at various Patent Offices around the globe like the United States Patent and Trademark Office (USPTO), European Patent Office (EPO), Canadian Intellectual Property Office (CIPO), German Patent and Trade Mark Office (DPMA), United Kingdom Patent & Trademark Office (UKPTO), IP Australia and Controller General of Patents Designs and Trademarks (CGPDTM). The TKDL efforts and submissions have helped in the withdrawing, cancellation, dead declaration, termination or claims amendments by applicants or rejection by the examiner(s) for at least 206 cases of patent applications using Indian TK and GRs[102]. This is a clear example that when the research is undertaken, the misappropriation and misuse can be avoided.

Another example which highlights the power of performed researches in the subject matter, is the initiative taken by the Ecuadorian Institute of Intellectual Property (IEPI). In 2014, the office, through the National Directorate of New Varieties of Plants and Traditional Knowledge, started an initiative to analyze the potential cases of biopiracy regarding Ecuadorian resources. Possible biopiracy cases include the removal of approximately 4,000 plants from Ecuador by USA scientists that could be used in the development of many products which patent applications were filled.

Many other developing countries have also had to face the brunt of misappropriation and biopiracy cases, which were stressed out through researches targeting the protection of TK and GRs. Kava (Pacific Islands-Fiji and Vanuatu), Ayahuasca (Amazon), Quinoa (Peru), Hoodia (South Africa) and Enola Bean (Mexico)[103] have been prominent cases worldwide.

Besides the fact that some evidence of biodiversity misappropriation was collected and gathered in some patent systems around the globe, the number of researches to bring to the light the real misappropriation numbers is far from enough. Especially when considering IBSA countries, the initiatives to collect these data are almost nonexistent. More than strengthen IBSA research collaboration portfolio, the submission of comprehensive, credible and verifiable analytical data as an evidence of biopiracy would be a very effective way to push the negotiation process forward to the TRIPS Council, as well as in the IGC.[104]

Final Considerations

So far as IBSA Dialogue Forum Members are concerned, the Brazilian Declaration acknowledged the value and importance of the protection of biodiversity through the IPRs. The IBSA MoU, Summits and other diplomatic meetings had urged the protection of GRs through the patent system and cooperation between the three partners towards the establishment of international mandatory disclosure requirement.

Many approaches have been considered regarding the implementation of multilateral treaties towards the development of an effective international mandatory framework protecting national GRs. However, no agreement has been achieved in the multilateral arenas where the topic has been discussed.

This study has identified important findings that highlight IBSA countries potential to collaboration in order to protect their genetic resources through the patent system and shed light on approaches to strengthen it. Regarding the protection of biodiversity initiatives, IBSA's collaboration has expanded but there is floor to enhance joint research activities in the subject matter and increase the level of harmonisation between the three patent offices.

IBSA countries could significantly improve their cooperation in the topic through agreements at their disposal by harmonised procedural guidelines within the three patent offices regarding to DRs. The different approaches and procedures in IBSA national patent offices could be a hint for a need of some level of homogeneity amongst the group members. Alignment between IBSA patent offices practices and application of similar standards for the DRs could lead to an interrelated level of protection for national GRs for the three countries. It could also mean more effective, efficient and cheap application processes for the patent protection seeker. The procedures would have some level of uniformity across the three countries. A level of uniformity in the DRs procedures for the three of the most mega diverse countries in the world could also work as a push for other countries towards national harmonised procedures and further plurilateral agreement.

Furthermore, a research collaboration agreement in order to lately produce analytical evidence of IBSA biodiversity misappropriation

through the patent system could assure verifiable evidence to support IBSA position in favor of DRs in multilateral forums. Technical studies regarding biopiracy cases, would expose granted patents and/or patent applications using IBSA GRs without meeting the ABS rules and/or DRs; strengthen the need of mandatory DRs in an international agreement; and, also correct asymmetric relationships in knowledge transactions between developed and developing economies. This option can also strengthen IBSA research collaboration portfolio by increasing the number of collaborations within IBSA countries research institutions.

The proposed initiatives would also help in the implementation of ABS system, since the achievement of ABS is barely possible if patent applicants and holders do not disclose the source of the GRs that they accessed and used for their inventions. Therefore, once we have a framework in the scope of the patent system, it would also help in the benefit-sharing implementation.

The IBSA Dialogue Forum, as the right forum for this discussion, can additionally strengthen the Indian, Brazilian and South African positions in the theme. Our coordination as a group can be a step towards expanding the scope of protection of our GRs and can ultimately result in a multilateral agreement in IBSA favour.

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41. We instruct the Council for TRIPS, in pursuing its work programme including under the review of Article 27.3(b), the review of the implementation of the TRIPS Agreement under Article 71.1 and the work foreseen pursuant to paragraph 12 of this declaration, to examine, inter alia, the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore, and other relevant new developments raised

by members pursuant to Article 71.1. In undertaking this work, the TRIPS Council shall be guided by the objectives and principles set out in Articles 7 and 8 of the TRIPS Agreement and shall take fully into account the development dimension.

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    - from India: Kishan Singh KARDAM (Mr.) (Senior Joint Controller of Patents and Designs, Indian Patent Office, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion, New Delhi), Sumit SETH (Mr.), (Counsellor, Permanent Mission, Geneva), and Animesh CHOUDHURY (Mr.), (Second Secretary, Permanent Mission, Geneva);
    - from Brazil: Daniel PINTO (Mr.) (Counsellor, Intellectual Property Division, Ministry of Foreign Relations, Brasilia), Cauê OLIVEIRA FANHA (Mr.), (Secretary, Permanent Mission to the World Trade Organization (WTO), Geneva), and Giorgia LICITRA (Ms.) (Intern, Permanent Mission to the World Trade Organization (WTO), Geneva);
    - from South Africa: Yonah Ngalaba SELETI (Mr.) (Chief Director, Department of Science and Technology (DST), Ministry of Science and Technology, Pretoria), Morore MPHAHLELE (Mr.) (Patent Searcher/Examiner, Companies and Intellectual Property Commission, Department of Trade and Industry, Pretoria).
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3

Importance of Traditional Medicine in Healthcare Cooperation among IBSA Countries

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Introduction

The IBSA countries acquire an important position in their respective regions. Brazil is the largest economy in Latin American region; similarly, India, which is second largest economy in Asia and biggest economy among South Asian nations, has experienced substantial economic and trade growth. Likewise, South Africa is among the two largest economies of the African continent and most advanced in the continent on many parameters. The India-Brazil-South Africa (IBSA) Dialogue Forum is a coalition of like minded three emerging powers intended to benefit from the global power shifts. The IBSA forum aims to integrate these economies by not only enhancing their respective position in world trade but also by increasing trade amongst these three nations. It was launched in June 2003 in Brasilia. Three months later, President Luiz Inácio Lula da Silva of Brazil, President Thabo Mbeki of South Africa and Indian Prime Minister Atal Bihari Vajpayee formed the *Group of Three* (G-3) during the fifty-eighth UN General Assembly session. After several ministerial meetings, President da Silva, President Mbeki and Prime Minister Manmohan Singh gather for first IBSA Summit in Brasilia in September 2006 (Dhir, 2019; Flemes, 2009; IBSA, 2006).

This activism on the part of three emerging developing countries, in particular India, Brazil and South Africa has resulted in the creation of a 'trilateralist' diplomatic partnership, itself a reflection of broader transformations across the developing world in the wake of globalisation (Alden & Vieira, 2005). IBSA had held its regular heads of government summits, the 1st summit was held in Brasilia (2006), 2nd in Tshwane (2007), 3rd in New Delhi (2008), 4th in Brasilia (2010) and 5th Tshwane (2011)

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but after that the no summit took place except 9th IBSA Trilateral Ministerial Commission meeting in New York, USA on 27 September 2018. While the IBSA initiative may be seen as an effort to increase the bargaining power of developing nations, it equally focuses on concrete areas of cooperation in trade, energy, environment, security, health, education, culture and transport which are the most prominent issues of IBSA's sector collaboration. An interesting feature that distinguishes this cooperation is that it is "on the basis of equality, mutual benefits and in accordance with the existing laws and regulations of each country" (Chaturvedi, 2011; Pandey, 2016; RIS, 2016).

Health is one of the most prominent developmental challenges faced by the IBSA countries. The area of health and medicine comes under sector cooperation track of the IBSA dialogue. India, Brazil and South Africa had agreed to work together on this sector to coordinate international outreach, since the formation of IBSA forum in 2003 and the 1st IBSA Summit in 2006 at Brasila, Brazil. In this meeting, a *Working Group* was formed under IBSA track. It worked for implementation plan on health sector areas mainly public health laboratories, health surveillance, traditional medicine and sanitary control regulation (IBSA, 2006). Subsequently, in 2007, the first Memorandum of Understanding (MOU) was signed for cooperation in the field of health and medicine during 2nd IBSA Summit in Tshwane, South Africa (IBSA, 2007). In 3rd and 4th summit held at New Delhi and Brasila respectively, many initiatives were taken to tackle down HIV/AIDS, Tuberculosis, and Malaria. Indeed, the attention had been also given to procurement of medicines, vaccines, medical research and development, Traditional Medicine (TM), Intellectual Property Rights, and Disease Surveillance besides pharmaceutical assistance programmes in the area of regulation and registration of health products as areas of cooperation. In the 5th IBSA summit the leaders expressed their conviction that universal access to healthcare and affordable medicines is a step towards achieving the ambitious goals adopted by the international community to fight against communicable and non communicable diseases (UNAIDS, 2011; IBSA, 2008; 2009; 2010).

Under IBSA dialogue, three countries have agreed to work on various issues related to health sector since the formation. But the issue of Traditional Medicine (TM) is getting inadequate attention. IBSA countries are among the major mega diverse countries, harbouring some of the most abundant endemic species that include medicinal plants, genetic resources and its associated traditional knowledge. India possesses both codified and non-codified knowledge of traditional medicines, regulated by law and Brazil and South Africa too have these resources. IBSA countries can come together to learn and share the experience how TM helps in improving healthcare system, cooperation and coordination for reorganisation, standardisation of TM products on international level, which can surely help in early achievement of SDG3 and other national targets initiated by these countries.

This paper has been divided into six sections. First section gives a brief profile of the IBSA countries with history and functions of IBSA dialogue and importance of health sector. Section two highlights the importance of traditional medicine in the healthcare system of IBSA countries. Third section elaborates the relevance of biodiversity, traditional knowledge and plant genetic resources (PGRs) in promoting TM among IBSA. Section fourth talks about how TM helps in reducing burden of communicable and non-communicable diseases in IBSA. Fifth section tells about provision, regulation and standards of TM and the last section deals with IPRs issues in TM, TK, PGRs in IBSA, and possible areas of cooperation for strengthening IBSA.

Importance of TM in Healthcare in IBSA

Traditional medicine according to WHO (WHO, Traditional medicine Geneva, 2003, Fact sheet No. 134)[1] is described as knowledge and belief systems which use minerals, plants and animal based remedies, spiritual therapies and exercises to prevent, treat and maintain well being. Reports have shown that 80 per cent of world's population relies on traditional medicines with medicinal plants predominantly. Over 35,000 of plant species medicinal usage have been well documented with an estimated sales to the tune of US$ 40 billion and an expected boom (Ernst, 2005; Ogunsola & Egbewale, 2018).

The role of TM in wellness care has been well recognised by various authorities and international organisations. WHO recognises that TM has a long history of use in health maintenance and disease prevention and treatment, particularly of chronic diseases.

It is well known that TM plays a crucial role in health care for a large part of the population living in developing countries. In fact, for centuries, TM was the only health care system available for prevention and treatment of diseases in different cultures (Alves & Rosa, 2007). The TM provides the bulk of health care, particularly for the poor. TMs covered a broad range of health areas including maternal and child health, malaria, HIV/AIDS, and reproductive health. It provides multiple functions in the delivery of healthcare and include drug sellers, traditional birth attendants, and village doctors (Sudhinaraset, et al. 2013). These systems have been especially effective in reaching out to the vulnerable sections of society in rural areas because of their local/regional centeredness. WHO estimates that traditional birth attendants assist more than 2/3rd births in developing countries (Vasisht & Kumar, 2002). Traditional practitioners of bone setting are common and popular in villages. They have also been generally more affordable than the modern medicine. The TM has great advantage such as availability and proximity, affordability, familiarity and cultural acceptability, effective treatment of particular disorders, holistic and person-centred approach, and protection of biodiversity (James, 2016).

In light of the above mentioned advantages, IBSA countries may focus on inclusion of TM in primary healthcare services. This would surely help in early achievement of Sustainable Development Goal 3 (SDG3) that ensures healthy lives and promotes well-being for all at all ages that have to be achieved by 2030 as well as quality of Universal Health Care and national targets initiated by these countries. India is running a healthcare agenda called 'Health Care in India - Vision 2020', Brazil has issue based action plans and South Africa has long term action plan called 'Agenda 2063'.

Relevance of Biodiversity, Traditional Knowledge and Plant Genetic Resources (PGRs) in promoting TM

The role of biodiversity is significant in the development of TM sector. The existence and utilisation of plant species in biodiversity rich regions has led to the development of traditional knowledge of plants and their medicinal properties. Protection, conservation and documentation of biodiversity have consequently had a significant impact in promotion of TM.

India is one of the recognised mega-diverse countries of the world, harbouring nearly 7-8 per cent of the recorded species of the world, and representing four of the 34 globally identified biodiversity hotspots (Himalaya, Indo-Burma, Western Ghats and Sri Lanka, Sunderland). India is also a vast repository of traditional knowledge associated with 45,500 species of plants being documented in the ten bio geographic regions of the country. As one of the 17 mega diverse countries in the world (with over 47,000 species of plants),[2] Indian

Systems of Medicine (ISM) and traditional health practitioners have had knowledge of medicinal usage of more than 7000 plants species. More than 90 per cent formulations of *Ayurveda, Siddha* and *Unani* systems of medicine are plant based. Equally rich is the traditional knowledge (TK) on agriculture where farming communities have identified valuable genes and traits in crops and maintained them over generations (James & Pathak, 2018).

Brazil is the most biologically diverse country in the world. It ranks at the top among the world's 17 mega diverse countries in terms of species endemism. It contains two biodiversity hotspots (the Atlantic Forest and the Cerrado), six terrestrial biomes and three large marine ecosystems. At least 103,870 animal species and 43,020 plant species exist, comprising 70 per cent of the world's catalogued animal and plant species. It is estimated that Brazil hosts between 15-20 per cent of the world's biological diversity, with the greatest number of endemic species on a global scale. Brazil's biodiversity is ever-expanding, with an average of 700 new animal species discovered each year.[3]

South Africa has nearly 10 per cent of all species of birds, fish and plants documented in the world and include 6 per cent of recorded mammals and reptiles. It also holds more than 30,000 flowering species that account for almost 10 per cent of the world's valuable plant species and more than 3,000 species of plants are used for medicinal purposes. National Red List assessments indicate that 10 per cent of South Africa's birds and frogs, 20 per cent of mammals and 13 per cent plants are threatened. In terms of natural ecosystems, the National Spatial Biodiversity Assessment (NSBA) (2004) revealed that 82 per cent of the main river ecosystems are threatened, with 44 per cent being critically endangered, 27 per cent endangered, and 11 per cent vulnerable. Of the country's 440 vegetation types, 5 per cent are critically endangered, 12 per cent are endangered and 16 per cent are vulnerable; 3 of the 13 estuary groups are critically endangered, a further five are endangered and two are vulnerable; 65 per cent of the 34 marine bio-zones are threatened, with 12 per cent being critically endangered, 15 per cent endangered and 38 per cent vulnerable. Regarding freshwater ecosystems, the assessment revealed that only 29 per cent of the country's main rivers were not modified, or largely not modified, and an estimated 50 per cent of South Africa's wetlands have been destroyed. An example is taken from the Cape Floral Kingdom, a particularly rich area in terms of flora and home to 38 per cent of South Africa's plant species; this region is also the smallest and most threatened of the world's six floral kingdoms, with 1,850 of its plant species (over 20 per cent) now threatened with extinction.[4]

As traditionally rich in bio resources, these biodiversity i.e. PGRs, species etc. are main source of inputs as well as raw material for preparing TM by using traditional knowledge. Even, the majority of the population of IBSA countries are regularly using traditional medicine as part of primary health care for prevention, curative, and palliative purposes due to its holistic approach and accessibility especially in rural areas.

Role of TM on Communicable and Non-Communicable Diseases in IBSA

Communicable diseases

For addressing some communicable diseases such as malaria, traditional medicine has played a significant role. Global incidence of malaria is around 300 million per year leading to mortality as high as 1.124 million and around 40 per cent affected population have no access to effective modern drugs. Two of the major drugs used in malaria management such as quinine and *artemisinin*[5] are derived from traditional medical knowledge such as in Peru. Traditional medicine is an important source for several such potential drugs for contemporary

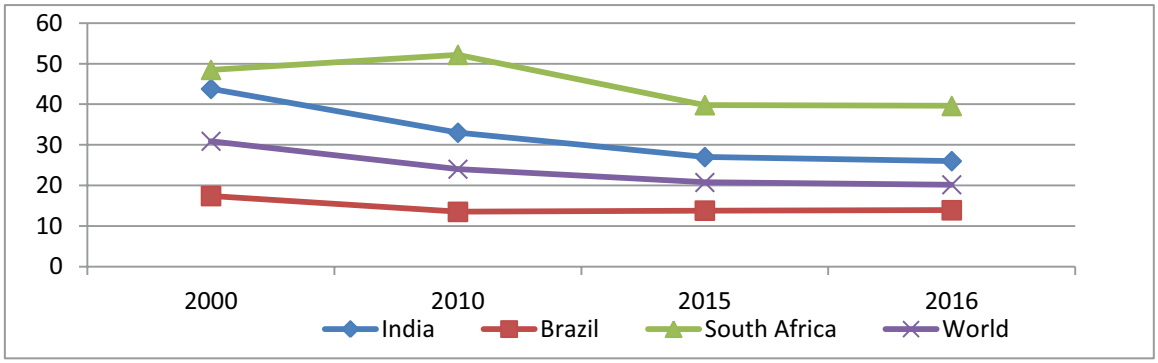
applications in various infectious diseases. A number of systematic studies on efficacy are slowly emerging suggesting antiretroviral, immunomodulatory and opportunistic infection reducing effects of traditional management methods (Unnikrishnan, 2010).

Longer life expectancy in emerging economies has brought increased risks of communicable diseases. Figure 1 shows the trends of incidence of death among IBSA countries due to communicable diseases and maternal, prenatal and nutrition conditions. The graph clearly shows that the incidence of death due to communicable diseases is declining in IBSA countries, but South Africa is facing more incidences of deaths due to communicable diseases, even more than world average; Brazil has the least among all. It is an accepted fact that TM is playing an important role in care of such communicable diseases. Systematic studies and wide dissemination of potentials of traditional medicine are required for further popularisation of such methods (Unnikrishnan, 2010) As mentioned earlier, IBSA countries have great advantage of biodiversity and practice of traditional medicine. Therefore more research and development in this area can help to reduce incidence of death and have more sustainable development in the IBSA countries.

Prevalence of HIV in IBSA countries is declining as it can be observed in Figure 2. Among IBSA countries, South Africa is facing huge burden of HIV. Traditional healers in South Africa are continuing to treat HIV symptoms in patients. Further understanding of commonalities and differences between traditional and allopathic health care systems, ways of ensuring risk reduction among the traditional healers, and promotion of honest and targeted dialogue between the two systems may allow for greater coordination between the two systems and ultimate improvement in HIV patient care in IBSA countries especially in South Africa (Audet, Ngobeni, & Wagner, 2017). Here, Brazil can share his experiences with South Africa, as recently Brazil has reduced 50 per cent of HIV/AIDS mortality using antiretroviral therapy.

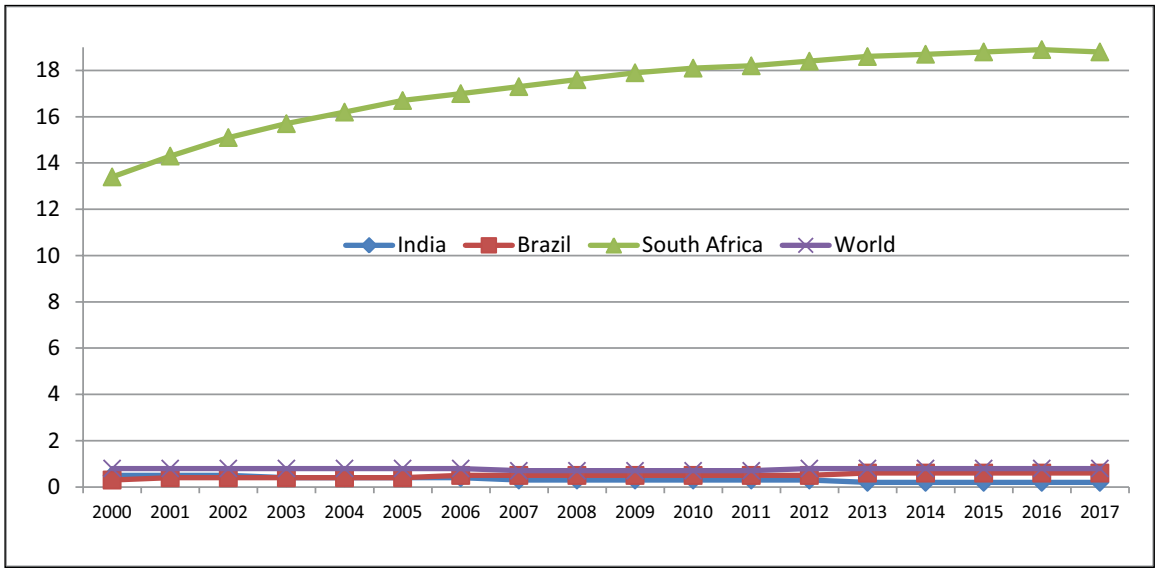
Incidence of tuberculosis in IBSA countries is very critical but declining at high rate. As shown in Figure 3, a large proportion of population among IBSA countries are facing huge incidence of tuberculosis, especially in South Africa. As South Africa is facing the huge burden of TB, there is great practice of treatment of TB through TM/TK in various part of country. Even, many plant species have been documented through phytochemical and

Figure 1: Cause of death, by Communicable Diseases and Maternal, Prenatal and Nutrition Conditions (% of total)



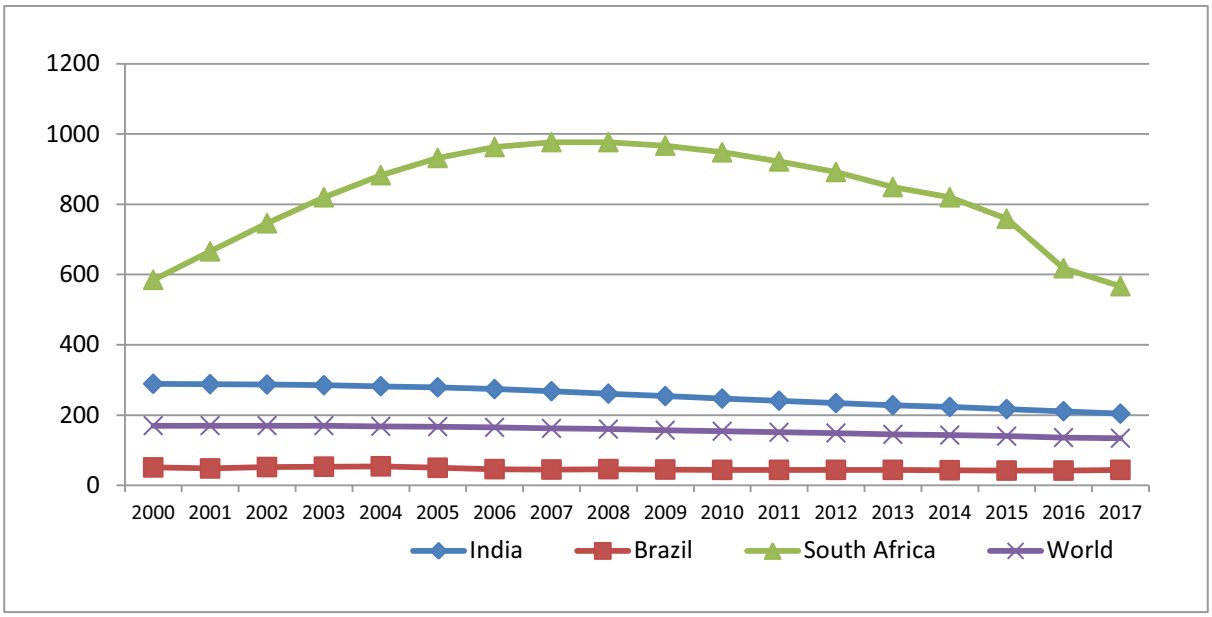
Source: WDI Database.

Figure 2: Prevalence of HIV in IBSA Countries adult (% ages 15-49)



Source: WDI Database.

Figure 3: Incidence of Tuberculosis in IBSA Countries (per 100,000 people)



Source: WDI Database.

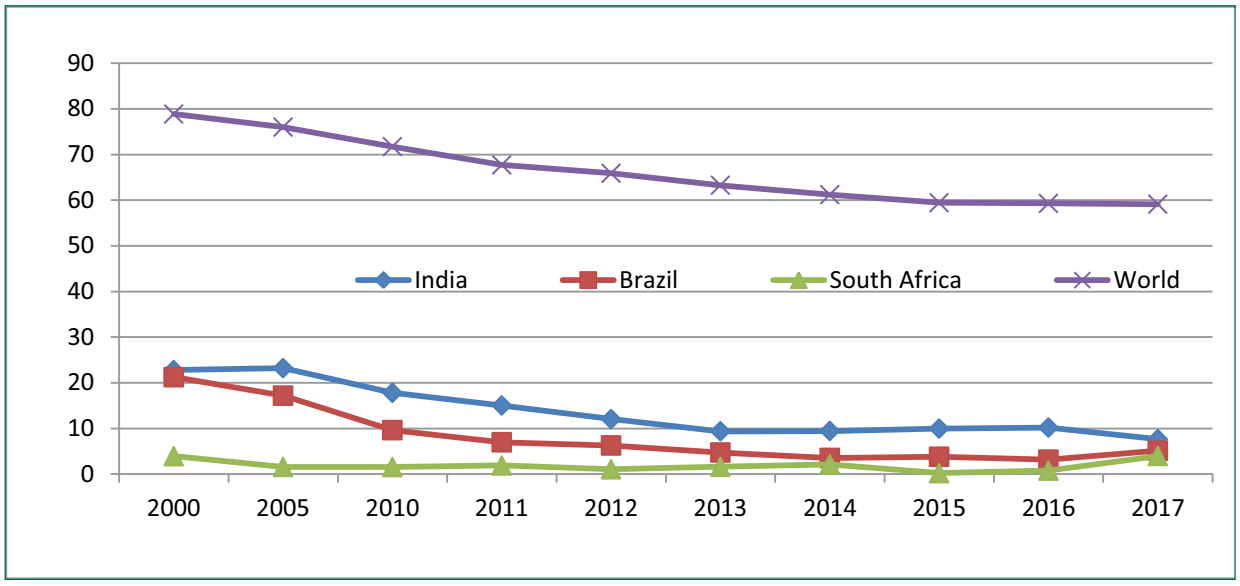
pharmaceutical research in South Africa. For example *Lippia javanica*[6] and *Carica papaya*[7] are used by the Limpopo Province, South Africa to treat TB. Leaves of *Lippia javanica*[8] are used extensively in Southern Africa to treat respiratory complaints. Likewise, *Cannabis sativa* [9] leaves are smoked by Zulu people to treat dry cough, or TB and chest complaints in southern and eastern Africa (Semenya & Maroyi, 2013). It can be mentioned that there are many medicinal plants and their extraction can be used to treat TB as traditional medicine. India and Brazil can learn this practice of TM from South Africa. They can even engage in more extensive research and Brazil and India can help in documentation for patent on these plants.

Non-communicable diseases

Apart from communicable diseases, there is huge burden of non-communicable diseases (NCDs) mainly cardiovascular, stroke, diabetes mellitus, cancer, chronic lung diseases, accidents and injuries, mental, etc. Non-communicable diseases (NCDs) kill 41 million people each year, equivalent to 71 per cent of all deaths globally. Each year, 15 million people die from NCD's between the age of 30 and 69 years; over 85 per cent premature deaths occur in low and middle-income countries. Cardiovascular diseases account for most NCD deaths, 17.9 million people annually, followed by cancer (9.0 million), respiratory diseases (3.9 million), and diabetes (1.6 million). These four groups of diseases account for over 80 per cent of all premature NCD deaths.[10] Concurrently, many people in developing countries such as China, Taiwan, India, Pakistan, Latin America as well as Mauritius have begun to turn to TM or alternative and complementary therapies such as Ayurveda, Yoga and other medicinal herbs or plant based medicine for curing many non-communicable diseases (Chintamunnee & Mahomoodally, 2012).

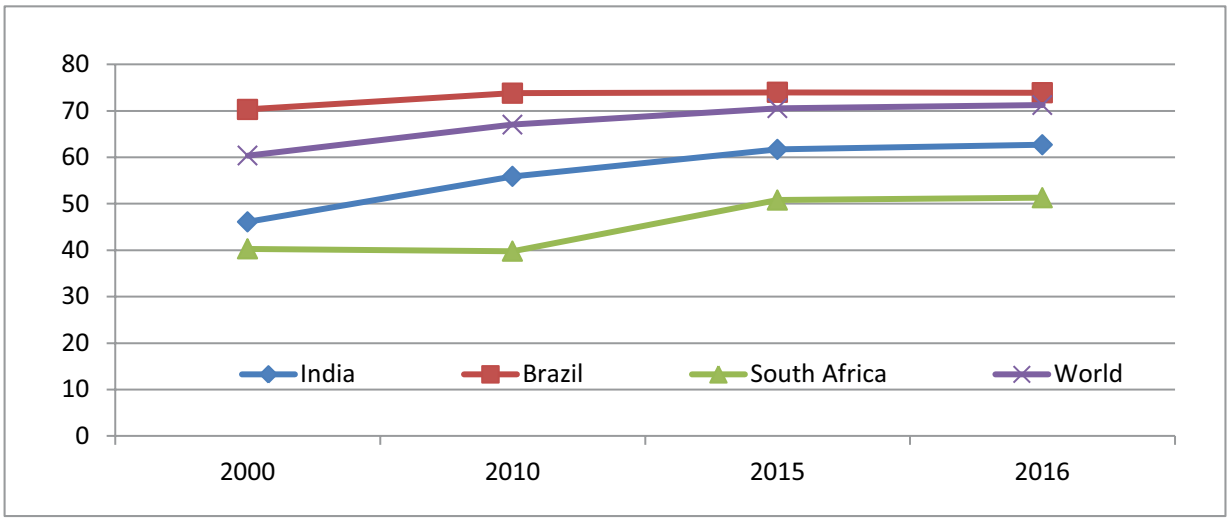
Enormous advances for treatment of non-communicable diseases have been made in medical care and there are a range of conventional medicines and preventive strategies available

Figure 4: Incidence of Malaria in IBSA Countries (per 1,000 people at risk)



Source: WDI Database.

Figure 5: Deaths Due to Non-Communicable Diseases (% of total)



Source: WDI Database.

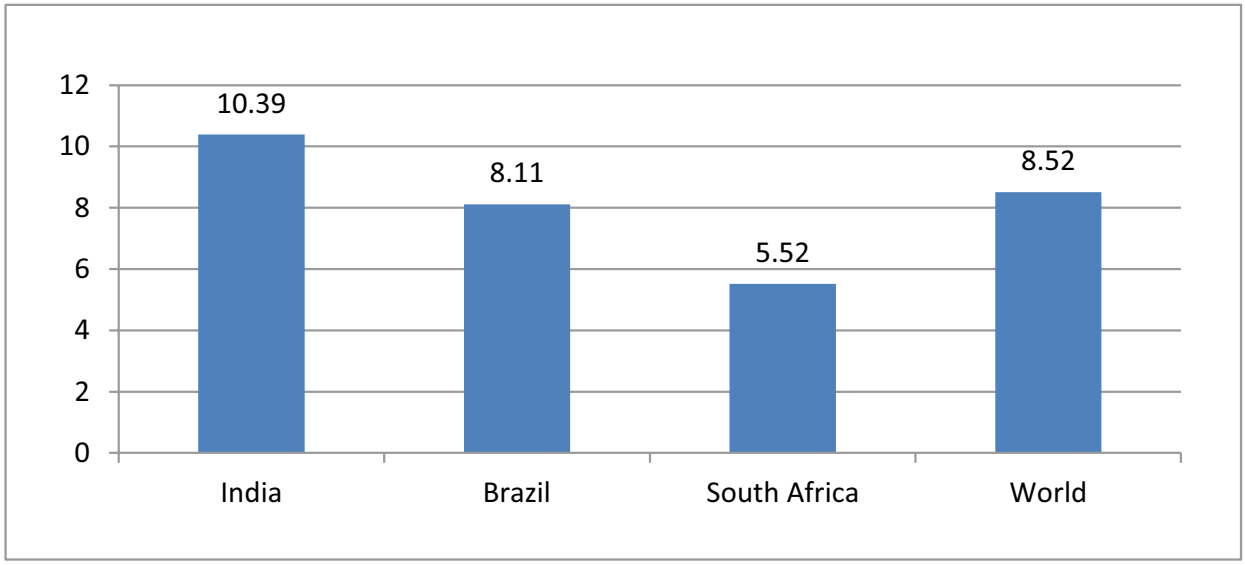
against the NCDs, but still the management of NCDs remains unsatisfactory. Indeed, NCDs are devastating scourges and despite the recent surge in new conventional drugs to treat and/or prevent the condition, NCDs prevalence continues to increase significantly. Therefore, the last few decades have witnessed a renewed interest in complementary or alternative medicines such as herbal medicines (HMs). Furthermore, as there is huge incidence of NCDs at global level, IBSA countries are also facing more of it, even more than communicable diseases. The above Figure 5 elaborates the incidence of deaths due to NCDs. As Brazil is having more number deaths owing to NCDs, India and South Africa should share their experience with Brazil to control NCDs.

The global prevalence of diabetes among adults over 18 years of age has risen from 4.7 per cent in 1980 to 8.2 in 2014.[11] Diabetes is a major cause of blindness, kidney failure, heart attacks, stroke and lower limb amputation. In 2016, an estimated 1.6 million deaths were caused directly by diabetes. India is facing high prevalence (around 10.7 per cent) of diabetes as shown in Figure 6, followed by 8.11 per cent in Brazil and 5.50 per cent in South Africa in the age group of 20 to 79 years. The rising prevalence of diabetes in India is due to combination of factors like rapid urbanisation, sedentary lifestyles, unhealthy diets, and use of tobacco.

TM and Western Medicine (WM) are thought to possess respective strengths and weaknesses: TM is considered to be slow in action but more thorough in "curing the root of the problem", while western medicine is "more powerful and quick" but may also cause significant side effects. The preference for using combination of TM and WM may stem from perceptions that synergism between the two would enhance clinical improvement, with each modality addressing different aspects of the illness. However, TM may be chosen as an alternative to WM when patients perceive the need for health maintenance or tonic care (Mahomoodally, Gurib-Fakim, & Subratty, 2010).

Obesity and overweight are the most important risk factors responsible for diabetes. Much of diabetes can be prevented or delayed by behavioural changes favouring a healthy diet and regular physical activity. Medicinal plants used for the treatment of diabetes, such as *Aloe ferox*[12], have also been investigated scientifically for anti-diabetic properties. The leaf, as well as

Figure 6: Prevalence Diabetes (% of population ages 20 to 79) in 2017



Source: WDI Database.

the sap from the leaf, of *Aloe ferox* is commonly used in TM, and *in vitro*[13] and *in vivo* studies have shown that it has insulin-increasing activity which may be the mechanism by which it reverses hyperglycaemia. *Ubulawu*[14], a traditional medicine prepared from roots of *Silene bellidioides*[15] and stem of *Helinus integrifolius*[16], is used to clean the body which helps to reduce impact of diabetes as well. This medicine is therefore said to provide both physical and psycho-spiritual healing and helps in improvement of health status. Thus there should be encouragement of TM for curing from diabetes (Mothibe & Sibanda, n.d.).

Provision, Regulation and Standards of TM in IBSA

- Promotion of TM in IBSA would include the following measures:
- Protection of TK associated with plant genetic resources and conservation of biodiversity and associated biological resources; and
- Institutional, regulatory provisions promoting TM in healthcare.

1. Protection of TK associated with plant genetic resources and conservation of biodiversity and associated biological resources: International legal instruments for TK protection has been discussed in various global forums. These include the Convention on Biological Diversity (CBD) and the World Intellectual Property Organisation (WIPO), a specialised agency of the United Nations Organisation (UNO). Established in 2000, the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) at WIPO is a "forum where WIPO member states discuss the intellectual property issues that arise in the context of access to genetic resources and benefit-sharing as well as the protection of traditional knowledge and traditional cultural expressions." At the WIPO IGC, a divide exist between demandeur countries (including India) seeking protection for TK, rights to knowledge holders, and patent disclosure requirements and non-demandeur countries that view these provisions as hindering innovation (James & Pathak, 2018).

To meet the obligations under Convention on Biological Diversity (CBD)[17], India came out

with The Biological Diversity Act, 2002[18] for preservation of biological diversity in India, and providing mechanism for equitable sharing of benefits arising out of the use of traditional biological resources and knowledge.

Furthermore, Traditional Knowledge Digital Library (TKDL) is a pioneer initiative by India to prevent misappropriation of country's traditional medicinal knowledge at International Patent Offices. Its genesis dates back to the Indian effort for revocation of the patent on wound healing properties of turmeric at the United States Patent and Trademark Office (USPTO). Besides, in 2005, the TKDL expert group estimated that about 2000 wrong patents concerning Indian systems of medicine were being granted every year at international level, mainly due to the fact that India's traditional medicinal knowledge which exists in local languages such as Sanskrit, Hindi, Arabic, Urdu, Tamil etc. is neither accessible nor comprehensible for patent examiners at the international patent offices. TKDL has overcome the language and format barrier by scientifically converting and structuring the available contents of the ancient texts on IMS i.e. Ayurveda, Siddha, Unani and Yoga, into five international languages, viz. English, Japanese, French, German and Spanish, with the help of information technology tools and an innovative classification system known as Traditional Knowledge Resource Classification (TKRC). TKRC has structured and classified the IMS in approximately 25,000 subgroups for Ayurveda, Unani, Siddha and Yoga. TKRC has enabled incorporation of about 200 sub-groups under A61K 36/00 in International Patent Classification instead of few sub-groups earlier available on medicinal plants under A61K 35/00 thus enhancing the quality of search and examination of prior-art with respect to patent application field in the area of traditional knowledge.[19] The effort of TKDL has also been appreciated by the WIPO, due to the key role played in the creation of standards for documentation of traditional knowledge (Menezes, 2019). The Director General, WIPO expressed in June 2003 that, *TKDL presentation at IGC brought strong recognition for leading work of India in the fields of traditional knowledge*[20].

Brazil has regulated protection of traditional knowledge through the Law on Access and Benefit Sharing of Genetic Resources and Associated Traditional Knowledge, No. 13.123 dated May 20, 2015.[21] Among the main features of this law is the 'benefit sharing agreement', which provides for one per cent of the total income from sales of a product derived from Brazilian Biodiversity. The focus is more on facilitation of research, innovation and faster access to GRs and TK. Other relevant legislations include Plant Variety Protection Law, No. 9.456, 28 April 1997[22] and Industrial Property Law, No. 9.279, May 14, 1996.[23]

South Africa's National Environmental Management: Biodiversity Act, 2004[24] is the relevant legislation with regard to TK protection in South Africa. Additionally, the Patent Amendment Act 2005 (Act No.20 of 2005)[25] regulates patent disclosure with regard to TK.

2. Institutional, regulatory provisions promoting TM in healthcare: On the path of international provisions IBSA countries have their own national standard laws on TM and which have been recognised in WHO, WIPO, TRIPS, CBD and other platforms. India has the Drugs and Cosmetics (D&C) Act, 1940[26], the Drugs and Cosmetics Rules, 1945 and the Drugs (Control) Act, 1950[27] contain the drug regulations of India. They prescribe the legal requirements for manufacture, import and sale of medicines in Ayurveda, Siddha and Unani systems, among others. They relate to regulating the quality, safety and efficacy of the medicines. Besides this, Government of India has setup the separate Ministry of AYUSH[28] (Ayurveda, Yoga and Naturopathy, Unani, Siddha, Homeopathy) that organises within India national and international congress and conferences, supports training in this field both in India and in other countries, organises

and sponsors both clinical trials in these fields and fundamental research (especially in homeopathy).

Similarly, licensing of TM in Brazil is regulated by the Brazilian Health Regulatory Agency (ANVISA)[29], and The Brazilian Association of Ayurveda (ABRA).[30] Both are responsible for health surveillance over products and services, including processes, ingredients, and technologies that pose any health risks. Brazil has also passed a law Brazilian legislation on access to the biodiversity (No 13.123, 20 May 2015)[31] which deals with access and benefits sharing of genetic resources and associated traditional knowledge; this law regulates access to components of the genetic heritage, protection and access to associated traditional knowledge and the fair and equitable sharing of benefits for the conservation and sustainable use of Brazilian biodiversity. These regulatory frameworks improved the technical requirements for the quality of TM products/ herbal products, and now it is better suited to the control of raw materials and complex products such as herbal preparations and products. The changes brought the Brazilian rules closer to those of international regulation. It is expected that these standards will boost the market of herbal medicines in Brazil, facilitating the population's access to these products (Carvalho, Lana, Perfeito, & Silveira, 2018).

Indeed, in South Africa the National Policy on TM/CAM was issued in 1996 as part of the National Drug Policy.[32] Laws and regulations are currently in the progress. The national programme on TM was issued in 2002. The national office was established in 2001 under the Ministry of Health.[33] The Medicines Control Council serves as the Expert Committee for TM; it was established in 2001.[34] Further, South Africa has also passed, the National Environmental Management: Biodiversity Act 2004 (Act No 10 of 2004)[35] and Protection, Promotion, Development and Management of Indigenous Knowledge Bill (IKS Bill, 2016).[36] The IKS Bill defines 'indigenous knowledge' as "knowledge which has been developed within an *indigenous community* and has been assimilated into the cultural make-up or essential character of that community includes (a) knowledge of a scientific or technical nature; (b) knowledge of natural resources; and (c) indigenous cultural expressions". The IKS Bill also establishes a legal person called an 'indigenous knowledge practitioner' as a person who is accredited and certified as an indigenous knowledge practitioner to render a service utilising indigenous knowledge which is distinct from a 'holder' which refers to the indigenous community from which indigenous knowledge originates. Unfortunately, the IKS Bill does not explicitly engage with the domain of TM (Govender & Thulare, 2016).

TM, TK, PGRs and IPRs: Issues in IBSA and Areas of Cooperation

Key areas on cooperation in TM:

- Strengthening co-operation with key partners for building a clear understanding of political positions on international IP regulation of TM;
- Formulating adequate national legislation for making use of flexibilities in international IP rules, and preserving the public interest through technical co-operation as well as mechanisms of policy diffusion.
- Collectively joining hands for technical cooperation through capacity building in terms of TK data base, training of service provider, documentation of TM for patient etc.
- South Africa and Brazil taking initiatives for having digital libraries of traditional knowledge, as India has and India can cooperate regarding this; and

At the WIPO, since more than a decade after the creation of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC), there is no sign of consensus on this issue, so IBSA countries jointly raise their voice.

Way Forward

It is well established that TM plays a crucial role in health care for a large part of the population living in developing countries especially in IBSA countries. In fact, for centuries, TM was the only health care system available for the prevention and treatment of diseases. Among public health, TM and biodiversity conservation encompass a number of relevant and contemporary issues which are becoming increasingly apparent, as exemplified by WHO's goal in medicines: "to help save lives and improve health by ensuring the quality, efficacy, safety and rational use of medicines, including traditional medicines, and by promoting equitable and sustainable access to essential medicines, particularly for the poor and disadvantaged".

Moreover, there is a growing recognition that knowledge of TM is important not only because of its potential to discover new treatments, but also because of its socio economic, conservationist and cultural components. TM has enormous relevance for IBSA countries as they are very rich in biodiversity and practice of traditional knowledge. IBSA countries should cooperate and come forward for research and development and patent protection of TM and work for linking directly to primary healthcare. Further, mutual recognition of TM products, service professionals, degrees, practices, and pharmacopoeia among IBSA countries can boost the TM sector, both for healthcare system and industry. Beyond this, IBSA countries can also come together to build a platform as laboratory of research and development especially in the field of TM. Such efforts would contribute towards achieving its healthcare goals in the proposed Sustainable Development Goal (SDG3) other national targets initiated by these countries.

Endnotes

1. http://apps.who.int/gb/ebwha/pdf_files/EB134/B134_24-en.pdf
2. https://www.cbd.int/countries/profile/default.shtml?country=in#facts
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4

Strengthening Financial Sector Cooperation in IBSA through Trade in Banking Services

Rabia Khatun*

Introduction

IBSA (India, Brazil and South Africa) is the group of three democracies representing three continents, namely Asia, Latin America and Africa respectively, was established in June 2003 with the aim of promoting south-south cooperation. The IBSA forum brings together three emerging economies of the South for further exploring the potential for cooperation for a fair, equitable and inclusive global order(RIS, 2008).

Over the years, IBSA has become an umbrella for various initiatives, both in the diplomatic field on the international stage and through sectoral cooperation in priority areas. Trade and investment is one of the important areas of cooperation between IBSA countries, as international trade has wider impact on economy and the potential for capital flows for boosting investment in the country. In IBSA economies, the service sector has emerged as an important sector which is driving economic growth and creating employment opportunities. Within the service sector, trade in financial services such as banking and insurance is very important segment. This observation is clearly consistent with the empirical evidence (for example Kono *et al.*, 1997), which shows that all major economic activities are increasingly becoming dependent on access to financial services.

In recent years, many countries, especially in Asia and Latin America, have been hit by financial crisis in the form of banking problems or exchange rate. Therefore, in order to promote more resilient financial system, strong banking system is a necessity. Bayraktar & Wang (2008) argued that opening up of banking sector may directly impact growth by improving the access to financial

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services and indirectly by improving the efficiency of financial intermediaries, both of which reduce the cost of financing, and in turn, stimulate capital accumulation and economic growth. Cross country empirical evidence from Asia suggests that limited openness in the financial sector results in slower institutional development, greater fragility, and higher cost of financial services (Classens and Glaessner, 1998).

Banking sector is the backbone of financial sector and it plays important role in the stability of overall financial sector. Therefore, if more investment in banking services can be encouraged, it will have positive impact on banking sector development and will also promote economic growth and stability. In this context, it is important to emphasise the fact that liberalisation of intra-IBSA services is another promising area of cooperation. Services trade can benefit all IBSA countries, as well as their custom union partners in SACU and MERCOSUR (Puri, 2007).

The role of trade in services in promoting economic growth and development is visible by its contribution to the world GDP and increasing share in the world trade. For example, the contribution of services in the world GDP has increased from 61.5 per cent in 1997 to 65.41 per cent in 2017 (World Bank data indicators) and to the world trade(export+import) it increased from 6.8 per cent in 1990 to 22.8 per cent in 2017(World Bank data indicators, 2017). Similarly, within IBSA, services contribute 55.7 per cent to IBSA GDP, and 8.4 per cent to IBSA trade. Further, financial services contribute 3.9 per cent and 5.3 per cent to IBSA exports and imports of total services respecively(World Bank, 2017). These numbers can help us understand the important role being played by services in the development of countries. However, despite of dominance of services in the world GDP, its contribution to trade in services is still very low.

The statistics further reveal that there has not been much progress in trade in services in comparison to trade in goods in the IBSA countries. Further, low level of contribution of the financial services in total trade of IBSA countries holds out a huge opportunity for exploring trade in financial services among them.

Financial services mainly include insurance and insurance related services and banking and other financial services. Financial services are of utmost importance as they play very important role in the development of the overall financial system of the economy. Since banking system is the backbone of the financial system, therefore, the aim of this study is of promoting cooperation in banking services among IBSA countries in order to strengthen their overall financial system. The focus of this study is to understand existing barriers in trade in banking services while establishing a commercial presence among IBSA countries, and how removing them can lead to increased level of trade in banking.

In view of the above background, this paper aims to study the scope of cooperation in banking services under the IBSA framework in order to promote intra-IBSA trade in financial services. The study is divided into eight sections. Section 2 discusses the trade in financial services in IBSA, in which, we take up structure of services and financial services in IBSA and Section 3 discusses intra-IBSA trade in financial services. Section 4 deals with the foreign investment policies for banking services in all IBSA countries. WTO commitments and Regional trade agreements of IBSA have been discussed in Section 5. Section 6 is devoted to analyse the specific commitments in banking services made to the GATS by IBSA countries. Section 7 takes up issues related to the cooperation in financial services and focuses on banking sector cooperation among IBSA countries. Finally, Section 8 concludes the study

Trade in Financial Services in IBSA

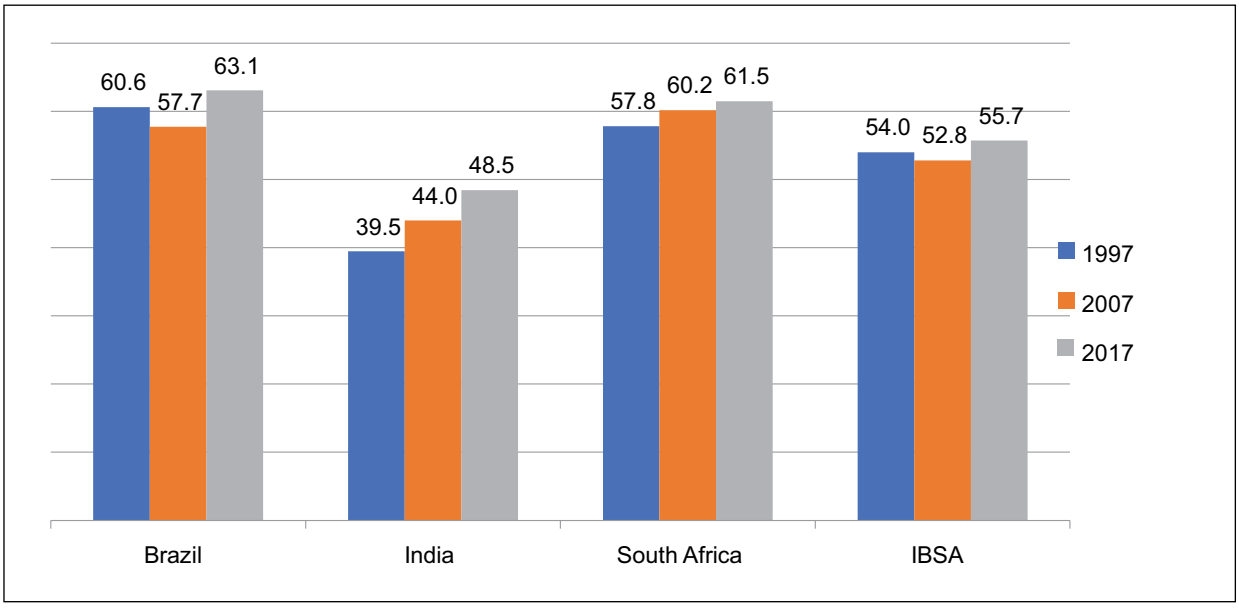
The IBSA countries, independently-have emerged as key players in global services trade in the past decade. Their share in global services market is also expanding rapidly. However, trade in services among IBSA countries is still lagging and much work remains to be done to tap into their potential. Nevertheless, there is considerable scope for greater integration of IBSA with the global services economy. As their per capita incomes increase, demand is likely to shift towards services, and accordingly significant proportion of services in GDP should increase. It is observed that there is need to addressing the issues related to policy barriers and trade costs. Private-sector development can also support the services trade to achieve significant growth in the IBSA countries over the medium term.

To understand the importance of trade in services for IBSA countries, we first need to understand the structure of overall services, especially that of financial services in terms of contribution of services in the overall trade in GDP in these economies.

Structure of Services in IBSA

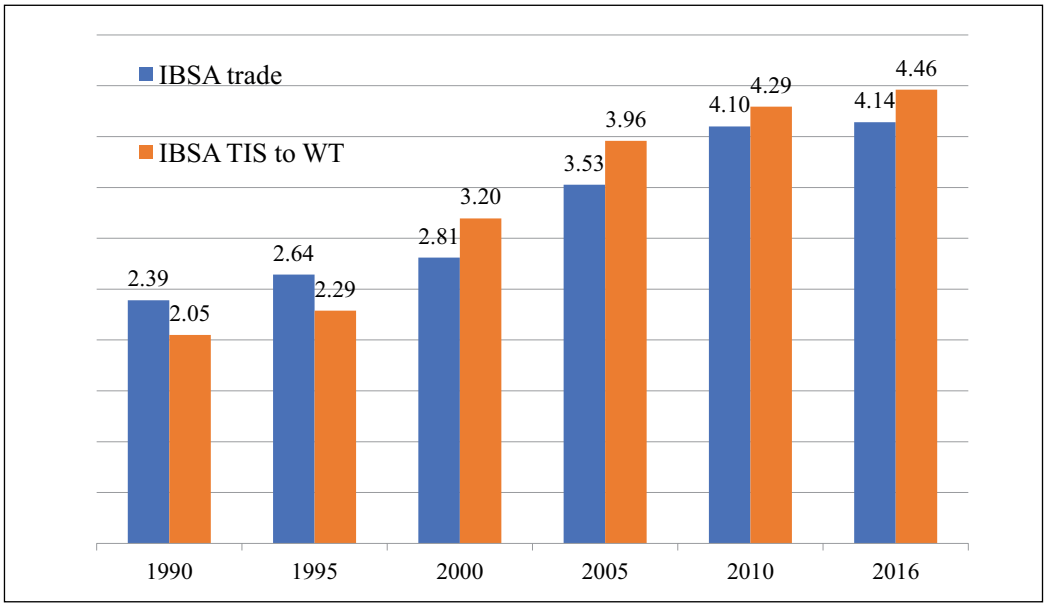
We attemp to understand the structure of services in IBSA countries with the help of Figures 1 and 2. Figure 1 represents the contribution of services sector in the GDPs of each IBSA country for the period 1997 to 2017 with decadal intervals. Figure 2 represents the contribution of services to IBSA Trade[1] and world trade. It shows that contribution of services to IBSA trade has risen from 2.9 per cent in 1990 to 4.14 per cent in 2016. However, contribution of IBSA trade in services to world trade has risen from 2.04 per cent in 1990 to 4.46 per cent in 2016. By comparing both the Figures, it is inferred that services play major role in GDP of IBSA countries by contributing more than 50 per cent to GDP of each country. However, their contribution to IBSA trade as it is evident from the data of trade in services as mentioned above. The combined share of IBSA world service trade is very low which highlights the need to promote trade in services in IBSA countries.

Figure 1: Contribution of Services to the GDP of IBSA



Source: World Bank database and author's own calculations.

Figure 2: Contribution of Services to IBSA Trade and World Total Trade



Source: World Bank database and author's own calculation.
Notes: *TIS-Trade in services, *WT-World Trade.

Structure of Financial Services in IBSA

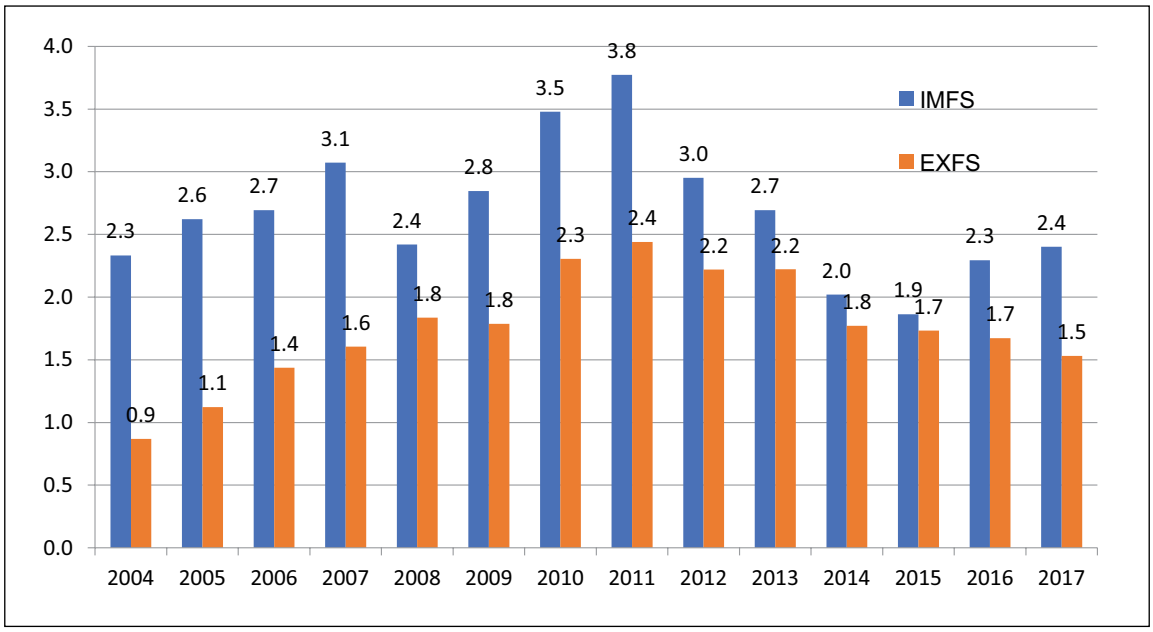
Figure 3 presents the structure of financial services trade in IBSA countries. It covers the exports and imports of financial services of IBSA countries for the period of 2004 to 2017. Exports of financial services grew from 0.9 per cent in 2004 to 1.5 per cent in 2017. If we analyse the imports of financial services in IBSA countries, it shows that it has grown on average of 2.5 to 2.8 per cent in the entire period except for 2010 and 2011 in which it grew to 3.5 per cent and 3.8 per cent respectively. The statistics tells that there is high potential yet to be explored in the financial services and there is the need to open the financial services.

Intra-IBSA Trade in Financial Services

Intra-IBSA trade in financial services is presented in Figure 4. INBR represents the trade in financial services between India and Brazil; INSA represents trade in financial services between India and South Africa, BRSA represents the trade in financial services between Brazil and South Africa for the period of 2000 to 2012; and TIBSA represents the total intra-IBSA trade in financial services among India, Brazil and South Africa for the same period. Trade incorporates exports and imports of financial services between the two economies.

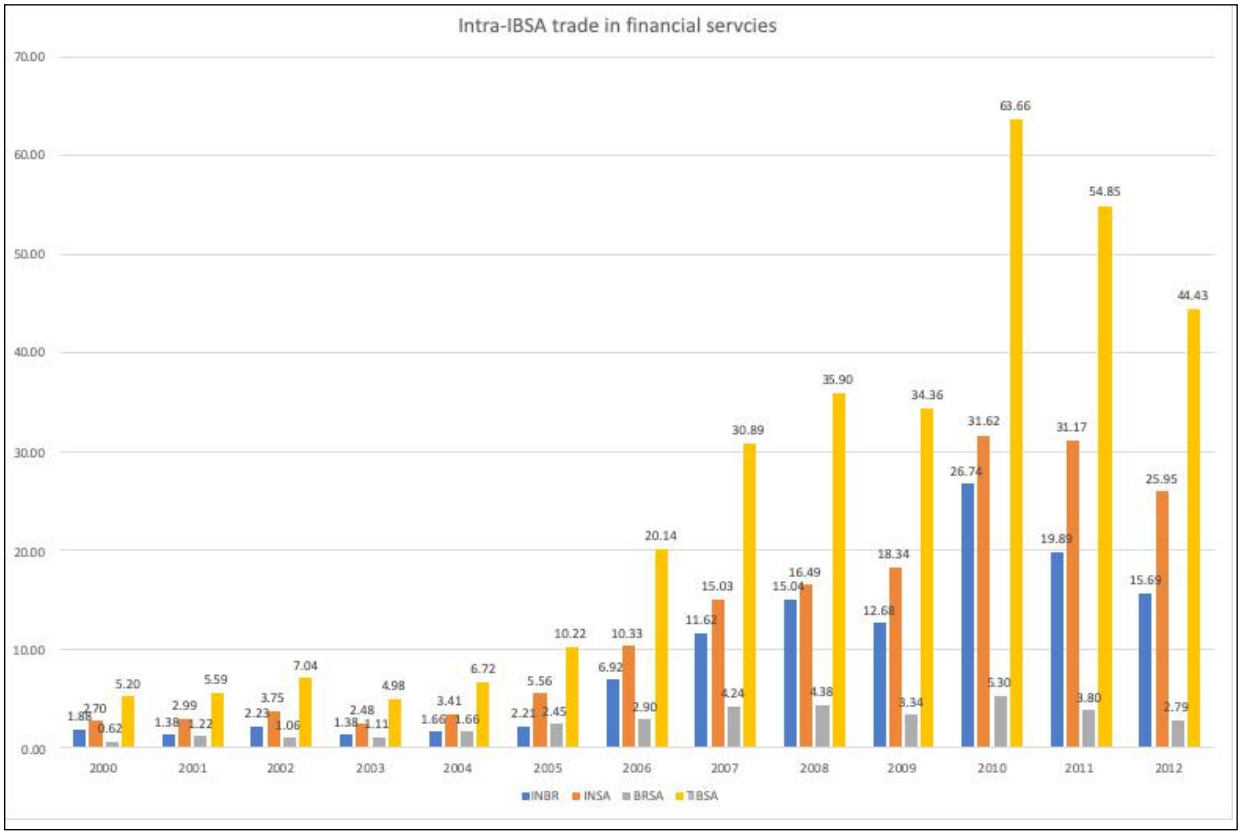
Trade in financial services between India and Brazil has risen from US$ 1.8 million in 2000 to US$ 26.74 million in 2010, which is the significant increase in 10 years, however after 2010 it declined to US$ 15.69 million in 2012. Trade in financial services between India and South Africa increased from US$ 2.7 million in 2000 to US$ 31.62 million in 2010, however this too declined to US$ 25.95 million in 2012. Further trade in financial services between Brazil and South Africa is lowest in IBSA countries. It increased from US$ 0.62 million in 2000 to US$ 5.32 million in 2010 and again declined to US$ 2.79 million in 2012. The overall trade in financial services among IBSA countries, increases from US$ 5.20 million in 2000 to US$ 63.66 million in 2010 and again following the trend it declined to US$ 44.43 million in 2012.

Figure 3: IBSA Exports and Imports of Financial Services as Percentage of Total Services Exports and Imports (2004-2017)



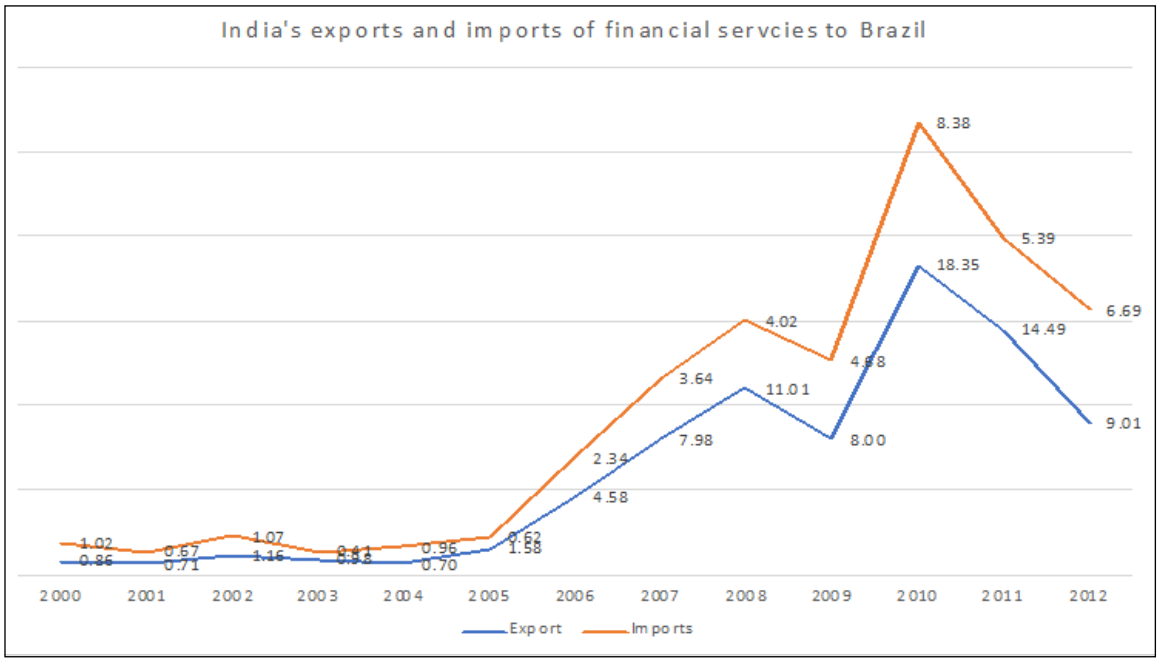
Source: World Bank database and author's own calculation.

Figure 4: Intra-IBSA Trade in Financial Services (2000-2012) (US$ Million)



Source: OECD stat and author's own calculation.

Figure 5: India's Exports and Imports of Financial Services to Brazil (2000-2012) (USD million)



Source: OECD stat and author's own calculation.

It can be inferred from the above analysis that bilateral trade between IBSA countries increased significantly from 2000 to 2010; however, it declined in 2012. This declining trend from 2010 to 2012 mainly because of the European debt crisis which began in 2008 with the collapse of Iceland's banking system, the financial crisis of 2007 to 2008, and the Great Recession of 2008 through 2012, the crisis peaked between 2010 to 2012.

After analysing the overall trade in financial services between the IBSA countries, the following section attempt to analyse the trend of exports and imports of financial services among IBSA countries.

Exports and Imports of Financial Services between India and Brazil

Figure 5 represents the exports and imports of financial services between India and Brazil for the period between 2000 to 2012.

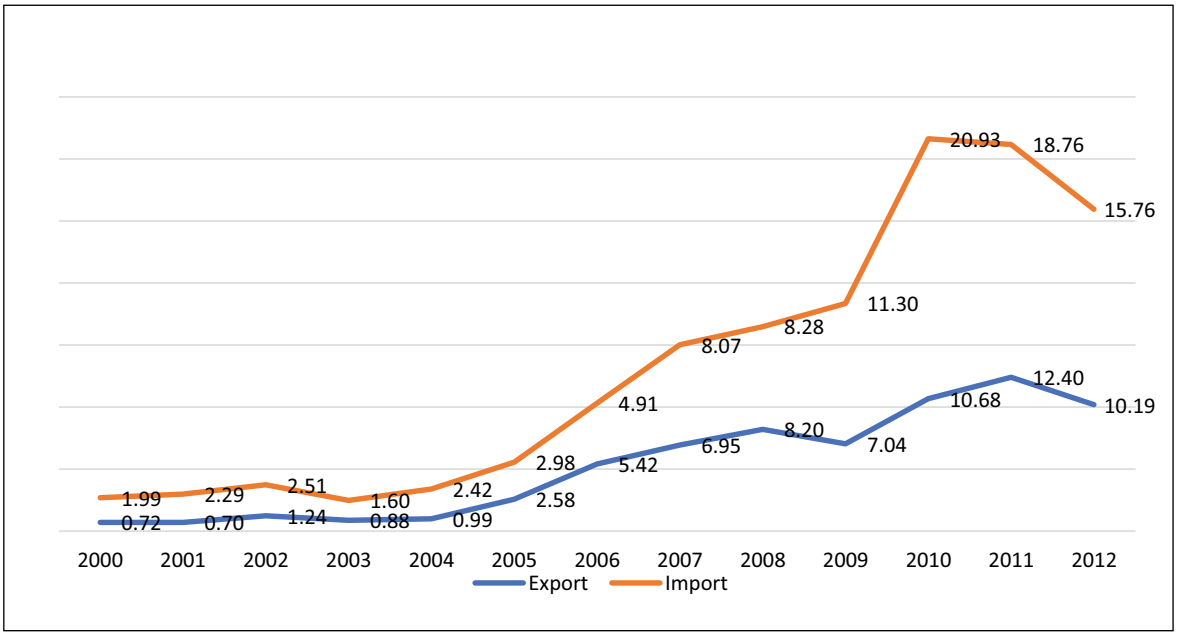
The Figure 5 represents the India' exports and imports of financial services to Brazil which is also Brazil's imports and exports of financial services from and to India respectively.

India's exports of financial service to Brazil increased from US$ 0.86 million in 2000 to US$ 18.35 million in 2010 and then it declined to US$ 9.01 million in 2012 (Brazil imports of financial services to India for the same period). India's imports of financial services from Brazil increased from US$ 1.02 million in 2000 to US$ 8.38 million in 2010 which further declined to US$ 6.69 million in 2012(Brazil exports of financial services to India).

Exports and Imports of Financial Services between India-South Africa

Figure 6 represents the exports and imports of financial services between India and South Africa for the period between 2000 to 2012.

Figure 6: India's Exports and Imports of Financial Services to South Africa



Source: OECD Stat and author's own calculation.

The Figure 6 represents India' exports and imports of financial services to and from South Africa which is also South Africa's imports and exports of financial services from and to India respectively. India's exports of financial services to South Africa increased from US$ 0.72 million in 2000 to US$ 10.68 million in 2010 and then it declined to 10.19 million US$ in 2012 (South Africa's imports of financial services from India). However, India's imports of financial services from South Africa is increased from US$ 1.99 million in 2000 to US$ 20.93 million in 2010 and then it declined to US$ 15.76 million in 2012 (South Africa's exports of financial services to India).

3.3 Exports and Imports of Financial Services Between South Africa and Brazil

Figure 7 represents the exports and imports of financial services between South Africa and Brazil for the period between 2000 to 2012.

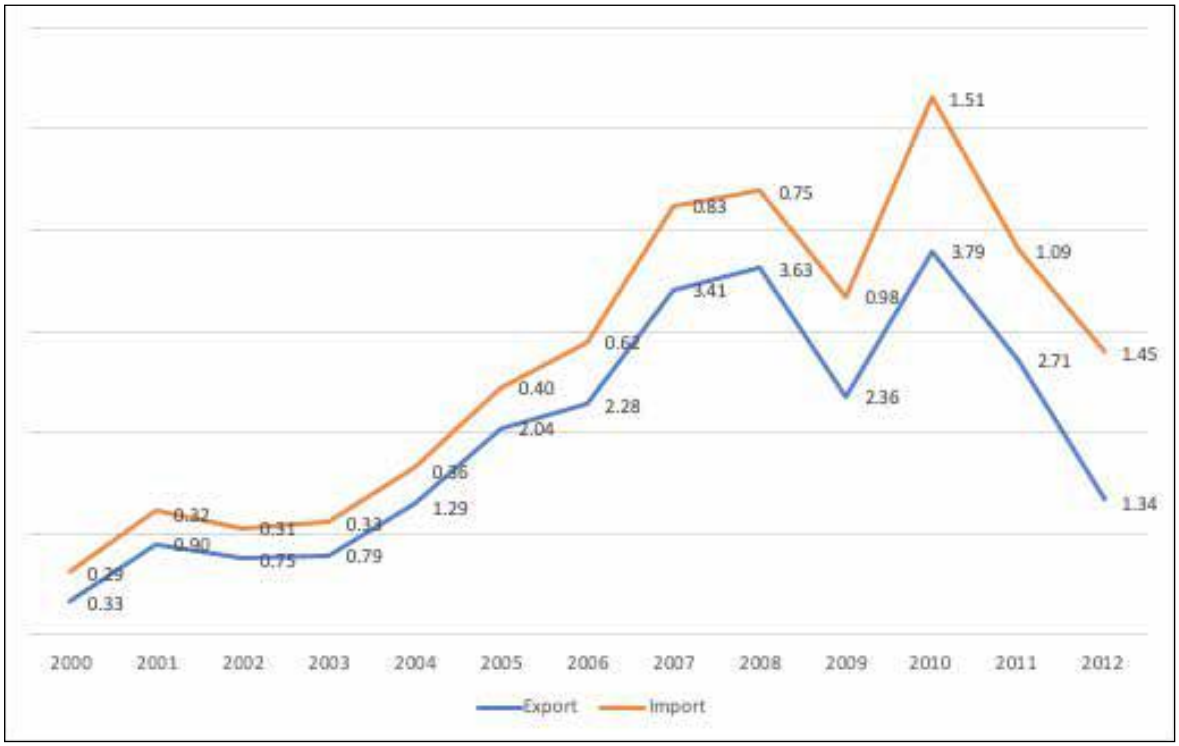
The Figure 7 represents South Africa's exports and imports of financial services to Brazil, which is also Brazil's imports and exports of financial services to South Africa respectively. South Africa's exports of financial services to Brazil is increased from US$ 0.33 million in 2000 to US$ 3.79 million in 2010 and then it declined to US$ 1.34 million in 2012 (Brazil's imports of financial services from South Africa). However, South Africa's imports of financial services from Brazil increased from US$ 0.29 million in 2000 to US$ 1.51 million in 2010 and then it declined to US$ 1.45 million in 2012 (Brazil's exports of financial services to South Africa).

Banking Regulations and Foreign Investment Policy for Banking Services in IBSA

Banking Regulations and Foreign Investment Policy for Banking Services in India

The services sector is not only the dominant sector in India's GDP, accounting for more than 50 per cent, but it has also attracted significant foreign investment flows and contributed

Figure 7: South Africa's Exports and Imports of Financial Services to Brazil



Source: OECD Stat and author's own calculation.

significantly to exports as well as in providing large-scale employment. The services sector is the key driver of India's economic growth. The growth in services continued to be led by the financial services subsector, and the trade, hotel, transport and communications subsectors (TPR, 2011). India is a net exporter of services. The services trade surplus as a percentage of GDP increased from US$ 29.5 billion or 3.1 per cent in 2006-07 to US$ 54 billion or 4.7 per cent in 2008-09. India's foreign investment inflow in financial services increased from US$ 2206 million in 2009-10 to US$ 3,075 million in 2014-15 to US$ 6,372 million in 2018-19. It increased more than three times since 2009 (RBI Report, 2014, 2019).

Banking Regulation in India

In India the Banking Regulation Act, 1949 governs the banking business and related financial services. The Reserve Bank of India is the Central Bank of India established under the Reserve Bank of India Act, 1934 and is empowered to issue rules, regulations, directions and guidelines on issues related to banking and financial sector.

Cross-border transactions and related activities are governed by the Foreign Exchange Management Act, 1999. This provides for, among other things, certain banking and other institutions to be licensed as authorised dealers in foreign exchange.

Foreign Investment Policy for Banking Services in India

Foreign investment in banking services is permitted in India through following categories:

- In public sector banks, foreign equity limit is 20 per cent.
- In private sector banks foreign equity limit is 74 per cent
- Branches of foreign banks
- Wholly owned Subsidiaries

In private sector banks, 49 per cent foreign equity is allowed through automatic route and beyond 49 per cent to 74 per cent under government route. However, in public sector bank, it is allowed 20 per cent only through government route. This 74 per cent limit includes investment under the Portfolio Investment Scheme by foreign institutional investors/foreign portfolio investors, Non-resident Indians and shares acquired prior to 16 September, 2003 by erstwhile OCBs, and continue to include IPOs, private placements, GDR/ADRs and acquisition of shares from existing shareholders.[2]

Followings are the requirement to establish WOS in India:

- The minimum capital requirement for establishing WOS in India shall be Rs 5 billion(US$ 69.9 million). The newly set up WOS of the foreign bank would be required to bring in the entire amount of initial capital upfront, which should be funded by free foreign exchange remittance from its parent.
- Fifty per cent board of directors should be Indian nationals/NRIs/PIOs subject to the condition that one-third of the directors are Indian nationals resident in India;
- The Priority Sector Lending norms mandate foreign banks to lend 40 per cent of their total loan book to priority sectors such as agriculture, rural infra, and MSMEs among others from April 2020.
- A sub-target of 8 per cent of net bank credit, or credit equivalent amount of off-balance sheet exposure, whichever is higher, is applicable for foreign banks with 20 branches and above, for lending to small and marginal farmers and micro enterprises (MSMEs) from 2019.
- An applicant for a new WOS bank licence will be required to forward a business plan, including a branch expansion plan for one year, along with its application. The business model will have to address how the bank proposes to achieve financial inclusion and retail banking.

Banking Regulations and Foreign Investment Policy for Banking Services in Brazil

The services sector continues to be the main contributor to Brazil's gross value added and job creation but suffers from structural weaknesses and international performance. The sector's gross value-added share rose progressively from 69.1 per cent in 2012 to 73.3 per cent in 2016. Its share in total employment stood at 65.7 per cent in 2014, suggesting a rise in labour productivity.

Brazil remains the largest financial services market in Latin America. Its financial system remained sound amidst the recession and low credit growth. The contribution of financial and insurance services to gross value added rose between 2012 and 2016, from 6.4 per cent to 8.3 per cent.

According to the OECD, the areas with the largest potential for regulatory reform include improvements in the general business and trading environment as well as specific policies in transport, telecoms and financial services. the OECD Services Trade Restrictiveness Index indicates that regulations in these areas tend to be more restrictive towards foreign services providers than in its Latin American peers. Services reforms have strong potential to unlock manufacturing performance and productivity.

Banking Regulations in Brazil[3]

The main legislation governing the regulation and supervision of banks and other financial institutions is Law 4,595/1964, which sets out the legal framework for the financial system.

There are three following entities primarily entrusted with the role of regulating and

overseeing financial institutions in Brazil, including banks:

- **National Monetary Council(CMN):** The CMN is the senior agency of the Brazilian Financial System and is responsible for monetary policies directed toward economic and social development.
- **The Central Bank of Brazil (BCB):** BCB is an autonomous governmental entity responsible for the execution of monetary policies, exchange controls, regulation of banks and financial institutions and control of foreign investments;
- **Brazilian Securities Commission (CVM):** CVM is responsible for imposition of penalties and fines to participants in the financial and capital markets.

The primary authority for banking regulation and supervision in Brazil is the BCB, which is responsible for the following:

- Authorising financial institutions to operate in the Financial System;
- Supervising transactions that are exclusive to banks;
- Regulating foreign exchange and derivatives markets;
- Imposing sanctions for non-observance of the regulations applicable to financial institutions; and
- Supervising capital flows.

Foreign Investment Policy for Banking Services in Brazil

The requirements and procedures involved in the establishment and authorisation of financial institutions are governed by rules issued by the National Monetary Council (CMN) and the BCB. The Brazilian Central Bank is the authority to grant prior approval for the establishment and operation of banks and other financial institutions.

The approval of the BCB enables financial institutions to, among other things:

- Grant loans (commercial banks);
- Finance projects for economic and social development (development banks);
- Participate in other companies and perform underwriting services (investment banks);
- Operate in the foreign exchange market.

Likewise, the opening of representative offices of foreign banks in Brazil is also subject to the prior approval of BCB. This approval was formerly granted only to individuals, although BCB has authorised certain companies of Brazil for this purpose to operate as legal representatives of foreign financial institutions.

The business undertaken by the representative of a foreign bank in Brazil is severally restricted; For instance, at no time it may act as a bank or undertake any banking business. He can promote and solicit clients for the services and facilities of the foreign bank. He can be appointed as the single point of contact by the bank and can obtain and supply the information required on variety of relevant matters. The BCB can cancel the approval of the representative if he is found to exceed his limits of work activities. If a foreign institution decides to establish a subsidiary in Brazil, it must obtain prior authorisation from the Brazilian President through a presidential decree.

Banking Regulations and Foreign Investment Policy for Banking Services in South Africa

South Africa is the upper middle-income group country. The banking industry is dominated by four local players, namely 1) Nedbank, 2) ABSA, 3) Standard Bank and 4) FirstRand Bank, and a newly established Capitec.

The services provided by these banks include both retail and investment banking services and are performing under highly competitive market conditions as many experienced foreign banks re-entered in the mid-1990s which had earlier exited in late 1980s.

Banking Regulation in South Africa

The South African Reserve Bank is the Central Bank of South Africa. It was established by section 9 of the Currency and Banking Act, 1920. Its activities are governed by the South African Reserve Bank Act, 1990 and it is primarily responsible for bank regulations and supervisions and strengthening the soundness of the banking system. It also issues licenses to banking institutions including mutual banks and monitors their activities in terms of Bank Act 1990 and the Mutual Banks Act 124 of 1993 respectively.

The Financial Sector Regulation Act, 2017 (FSR Act) established a 'Twin Peaks' model of financial sector regulations for South Africa by means of two regulators, namely Prudential Authority(PA) operating within the administration of SARB and a New Financial Sector Conduct Authority(FSCA).

The Prudential Authority supervises the domestic activities of all banks, representative offices and branches of foreign banks, and the foreign activities of South African banks. A key objective of the PA is to promote the soundness of the domestic banking system, through effective and efficient application of international regulatory and supervisory standards and best practice.

FSCA supervises the business of the financial services firms with a view to ensure fairness of services to the firms' customers.

Foreign Investment Policy for Banking Services in South Africa

South Africa has a well-established banking regulatory framework and for an entity to conduct business as a bank in South Africa, it is first required to be registered under the Banks Act, 1990. The requirements for an entity to be registered as a bank are: a) the relevant entity must apply to the PA for authorisation to establish a bank, b) it must apply for registration as a bank and c) a bank must also obtain an annual licence.

Post-registration and obtaining of the licence, the entity as a Bank can carry out "the business of a bank" as defined in section 1 of the Banks Act, in particular to conduct deposit taking business in South Africa. A branch of a foreign bank can also register to conduct the business of a bank in South Africa, under section 18A of the Banks Act. The Banks Act and the Regulations relating to Banks (Regulations) apply equally to branches, unless stated otherwise.

The Banks Act provides for the registration of representative offices of foreign banks. Representative offices cannot conduct the business of a bank (*section 34, Banks Act*).

A foreign[4] applicant wishing to establish a branch in South Africa must comply with the additional requirements set out in the Regulations to the Banks Act (*Regulations Relating to Conditions for the Conducting of the Business of a Bank by a Foreign Institution by means of a Branch in the Republic*) (Conditions[5]):

- The applicant must for the 18 months before the application have held net assets of at least US$ 1 billion, or if belonging to a banking group, that banking group must have net assets of at least US$ 1 billion and that branch also must have net assets of at least US$ 400 million.
- The applicant must have a long-term investment grade debt rating acceptable to the PA.
- The branch capital must at all times be at least the greater of ZAR250 million or 8 per cent (or such higher percentage prescribed by the PA) of the amount of assets and other risk exposures of the branch.
- The branch must maintain a minimum reserve balance in an account with the SARB.
- The value of the unencumbered assets of the applicant cannot be less than the percentage of liabilities stipulated by the PA.
- The PA must be satisfied that the applicant lawfully conducts the business of a bank in a foreign jurisdiction.

WTO commitments and Regional Trade Agreements (RTAs) in IBSA

India's WTO commitments and RTAs

India is a founding Member of the World Trade Organisation (WTO) and provides Most Favoured Nation (MFN) treatment to all Members and other trading partners. India accepted the Fourth and Fifth Protocols of GATS and is a strong advocate of the multilateral trading system and has historically been party to some regional agreements. Till today India has signed 18 trade agreements in force with individual countries and group of countries such as ASEAN, MERCOSUR, etc.[6]

Brazil's WTO commitments and RTAs

The Brazilian economy is characterized by a mixed economy that relies on import substitution to achieve economic growth. Brazil is the founding member of WTO and participates actively in its work including prominent voice for developing countries, a leading emerging economy and remained committed to strengthening the multilateral trading system and to successful completion of Doha Development Agenda. It accords at least Most Favored nation treatment (MFN) to trading partner including non-trading partner.

Brazil's commitments under the GATS were last changed in March 2016 with the acceptance of the fifth protocol of GATS in the area of financial services. Brazil's Schedule of Specific Commitments contains undertakings in certain business services (including professional services), construction services, courier services, distribution services, financial services, hotels and restaurants services, as well as rail, road and pipeline transport services and those auxiliary to all modes of transport.

Further, Brazil has also implemented the decisions adopted at the WTO's 8th and 9th ministerial conferences relating to the granting of preferential treatment to services and services suppliers from LDCs.[7]

South Africa's WTO commitments and RTAs

South Africa has been a WTO member since 1 January 1995 and a member of GATT since 13 June 1948. South Africa is the important member of the Southern African Customs Union (SACU) which is a custom union among five countries, namely, Botswana, Lesotho, Namibia, South Africa and Eswatini. Main objective of SACU is duty free movement of goods with a common external tariff on goods entering any of the countries from outside the SACU. SACU has preferential trade agreement between India and also with MERCOSUR.[8]

South Africa has also negotiated agreements with the European Free Trade Association and Mercosur.

Free Trade Agreement (FTA) on Services in IBSA Countries

India has signed first ever FTA on services with Singapore and both the countries have received significant market opening commitments in financial services. Three Singaporean banks, namely, Development Bank of Singapore, United Overseas Bank and Overseas Chinese Banking Corporation Limited were allowed to establish fifteen branches in India over a period of four years. The three banks could also be established locally as wholly owned subsidiaries, but each should have a single form of presence. In return, Singapore agreed for three Indian banks to be granted Qualified Full Banking privileges while there was no limit on those seeking only full banking license. On portfolio investment, some relaxation was given for the two government owned wealth management companies of Singapore, the TEMASEK and General Investment Corporation, which could each invest up to 10 per cent equity of paid-up capital in the Indian companies or the prevailing threshold at any point of time, whichever was higher. As for asset management companies, established in India, owned or controlled by Indian or Singaporean judicial persons, they

were permitted to invest an additional US$ 250 million over then existing cap of US$ 1 billion for investment in equities and securities traded in the Singapore stock exchange.

IBSA Commitments in Banking Services to GATS

The policies affecting trade in services can be understood with the help of specific commitments made by IBSA countries to GATS. Though specific commitments are minimum guarantee to the other member of WTO that rules will not change to their disadvantage, actual policies in services trade may differ with commitments.

GATS and Specific Commitment in Financial Services

General Agreement on Trade in Services (GATS)[9]

The basic objectives of GATS are to ensure equal treatment of all the signatories on accessing the foreign markets and to overtime promote liberalisation in trade in services. Therefore, the GATS agreement assumes that many barriers to trade in services and limitations on the operation of foreign services firms come from government regulations, measures and administrative decisions. To achieve its objectives, the GATS agreement has made a set of rules and obligations that every member country's governments have to implement to allow foreign service providers to operate more freely in the domestic economy.

Specific Commitment in Financial Services by IBSA Countries

The commitments in financial services are made in accordance with GATS annex on Financial Services. All the commitments are subject to entry requirements, domestic laws, rules and regulations. As per GATS document, every member country may impose certain restriction on each service sector including financial services by providing schedule of specific commitments to protect their domestic economy. Specific commitments are minimum guarantee by the member country to other member countries that the conditions of entry and operation in the domestic market will not be changed to their disadvantage.

Specific commitments in financial services are mainly divided in insurance and insurance related services and banking and other financial services. However, for the purpose of this study, we are analysing commitments in banking and other financial services under the heading of Banking services. Commitments can be made via two ways, i.e. on market access and national treatment on each mode of supply i.e. Mode 1 (cross border trade), Mode 2 (consumption abroad), Mode 3 (commercial presence) and Mode 4 (movement of natural person). However, here we are analysing commitments made in market access as market access represent the major barriers in banking services.

Table 1 represents the market access commitment of banking services made by IBSA countries on first three modes of supply, i.e. mode 1, Mode 2, Mode 3. Mode 4 has not been considered as it is less relevant in terms of financial services. The analysis of the above table is presented as below:

Market access commitments in banking and other financial services has been divided into three categories, i.e. banking services (lending and deposits of funds), other financial services, and services provided by non-financial institutions. The commitments in banking services has been analysed for the IBSA countries below:

Market access commitments on commercial presence (Mode 3) are among the most important components. This reflects the role of commercial establishment as the primary mode of entry into foreign markets for commercial banks, though

Box 1: GATS Obligations

GATS has two obligations:

A. General obligation:

The obligations that apply directly and automatically to all member countries of the WTO are as below:

(i) Most favoured nation (MFN) treatment: treating all foreign and domestic financial services provider equally.

(ii) Transparency means openness and notification of all measures and new laws on financial services to other WTO members.

B. Specific Commitment:

Every member country is required to make a schedule of specific commitments, which includes limitations on the following:

(i) Market Access: These are restrictions which may be imposed on the entry of foreign services or service suppliers into the domestic market.

(ii) National treatment**:** It is a principle which requires equal treatment of foreigners and locals, i.e. discriminating against foreign in favour of domestic services and service suppliers. The liberalizing content of the GATS depends on the extent and nature of sector-specific commitments assumed by individual members concerning these two provisions.

(iii) Additional commitment - in addition to market access and national treatment, a country may include additional commitment as in the third column.

The market access provision prohibits six types of limitations, unless they have been inscribed by a member in its schedule. These are:

(i) Limitations on the number of suppliers.

(ii) Limitation on the total value of service transactions or assets.

(iii) Limitation on the total number of service operations or on the total quantity of service output

(iv) Limitation on the total number of natural persons that may be appointed as employees.

(v) Measures that restrict or require specific types of legal entity or joint venture.

(vi) Limitation on the participation of foreign capital

Box 2: Definition of Trade in Services

As per GATS, trade in services is defined in terms of four modes of supply as follows:

Mode 1 (Cross border trade): It deals with cross border supply of services, which crosses a national frontier; that is the taking of a loan or the purchase of insurance cover by a consumer from a financial institution located abroad.

Mode 2 (Consumption abroad): It involves the movement of consumers to the territory of suppliers, e.g. the purchase of financial services by consumers while travelling abroad.

Mode 3 (commercial presence): This mode is of crucial significance, and entails the commercial presence of supplier of one member in the jurisdiction of another member, e.g. when a foreign bank or other financial institution establishes a branch or subsidiary in the territory of a country and supplies financial services.

Mode 4 (Presence of natural presence): It covers the supply of services through the presence of natural persons, e.g. independent financial consultants or bank managers, of one member.

Table 1: Market Access Commitments in Banking Services in BRICS Economies

	Brazil	India	South Africa
Acceptance and lending of funds	**Mode 1 & Mode 2 -** Not allowed **Mode 3 -** establishment of branch is allowed s. t. case by case authorisation by means of presidential decree.	**Mode 1 -** Not allowed **Mode 2 -** Not allowed **Mode 3 -** Only through branch operations. (i) A limit of 12 licenses per year both for new entrants and existing (ii) Licences issued for ATMs installed by foreign banks will not be included in the ceiling of twelve licences banks. (iii) Investment in other financial services should not exceed 10 percent of owned or 30 percent of the invested company's capital whichever is lower.	**Mode 1 -** Not allowed **Mode 2** - Not allowed except for provision and transfer of financial information and financial data processing. **Mode 3 -** Only banks registered to operate in South Africa with the required minimum capital base are eligible to seek authorisation as a foreign exchange dealer. Other financial services need to be incorporated as public companies in South Africa and registered with the supervisory authority to carry on business.
Services provided by non-financial institutions	**Mode - 1 & Mode 2 -** Not allowed **Mode 3 -** Allowed subject to conditions	**Mode 1 -** Not allowed **Mode 2** - Not allowed **Mode 3** - (i)Allowed for foreign bank branches licensed to do banking business in India. (ii) Allowed for foreign financial services companies (with foreign equity not exceeding 51 percent.	

the rise of electronic channels has expanded the potential for cross border trade in financial services. Market access restrictions remain in the form of foreign equity limits, restrictions on legal form, discriminatory licensing criteria and restrictions on cross border trade. The analysis of the above table is given as below for each country.

Brazil: Market access is not allowed in cross border trade in banking services as well as services provided by non-financial institutions. However, market access is allowed for commercial presence subject to conditions and authorisation by presidential decree.

India: Cross border trade in banking services is not allowed, however, commercial presence is allowed, and a limit of 12 licenses per year for both new and existing foreign banks. Investment in other financial services should not exceed 10 per cent of owned or 30 per cent of the invested company's capital whichever is lower.

South Africa: Cross border trade not allowed in banking services except for provision and transfer of financial information and financial data processing. Further, commercial presence of banking is allowed only for bank registered in South Africa with the required minimum capital base are eligible to seek authorisation as a foreign exchange dealer. Companies involved in the other financial services need to be incorporated as a public company in South Africa and registered with the supervisory authority to carry on business in South Africa.

In banking and other financial services, it is observed that with respect to cross border trade, market access is not allowed by all IBSA countries, except South Africa. The latter partially allowed cross border trade in financial leasing, transfer of financial information, and financial data processing and other auxiliary financial services.

Concerning commercial presence, market access has been allowed by all IBSA countries subject to country-specific terms and conditions and restrictions imposed in terms of foreign equity and number of licenses, etc. For investment in other financial services, In India, investment should not exceed 10 per cent of company's owned or 30 per cent of invested company's capital whichever is lower.

Based on the analysis above, it is said that all

Box 3: India's revised Offer in Financial Service

India has made further improvements in the initial offer made in 1998, and provided revised offer in 2005, to undertake extensive commitments in a number of new sectors/sub-sectors including life insurance services, services auxiliary to insurance, recreational. New commitments have also been offered in cross border supply in a large range of other business services, professional services, research and development services, rental and leasing services and real-estate services, etc.

It allowed establishing a wholly-owned subsidiary subject to regulations of the Reserve Bank of India. Further, it offered twenty licenses per year both for new entrants and existing banks**.** Earlier it was 12 licenses as also mentioned in the table above. Installation of ATM at a place other than in licensed branches is treated as a new place of business and requires a license. Licenses issued for ATMs installed by foreign banks will not be included in the ceiling of twenty licenses referred above. The market share again made unchanged at 15 per cent for foreign banks, and foreign banks already operating in India can invest but no more than 10 per cent of owned funds in other financial services companies or 30 per cent of the company's capital, whichever is lower. In line with India's revised offer in financial services, Brazil and South Africa should also try to make a revised offer and then all IBSA countries should make it legally binding

the IBSA countries have almost restricted cross border trade in overall trade in financial services with few exceptions. Almost no commitments in consumption abroad. Also, it is observed that all the IBSA countries have allowed market access for establishment of commercial presence subject to limitations on foreign equity, residency requirement, minimum capital requirement etc. It may, therefore, be concluded that IBSA countries should try to remove restrictions from the cross-border trade, as cross border trade is a very important mode of supply of financial services.

Previous analysis based on specific commitments to GATS, does not necessarily represent the actual policies (Borchert *et al*., 2013). Therefore, it is very important to assess the existing barriers in trade in financial services in terms of specific commitment made to GATS as well as barriers imposed on practice.

Therefore, there is a need to analyse the commitments which are there in practice. To measure the barriers imposed in practice, Borchert *et al*. (2012, 2013) focusing on 103 countries collected information on services trade policies across a range of services and the relevant modes of supply in order to construct the Services Trade Restrictive Database (STRD). STRD includes information on services through cross border delivery, establishing commercial presence and movement of natural persons. The focus of their research remains on how policy measures discriminate against foreign services or foreign service providers (FSPs). With respect to restrictions on financial services, they have found that both banking and insurance services are relatively free from explicit restrictions, contrary to the general perception that governments maintain a precautionary restriction in financial services.

They further found that there is no significant restriction on either Mode 1 or Mode 3 in more than half of their sample countries. Only a few countries remain significantly restrictive namely, Ethiopia, Iran, Zimbabwe and Qatar. The survey also reveals that countries do restrict cross border trade in financial services more stringently than FDI. For example, across financial subsectors, cross border trade in reinsurance and banking services is much more open than cross border trade in life and automobile insurance services. Within the banking sector, offering deposit by availing services across borders is in general more restricted than borrowing from abroad. They have found this pattern to be uniform across all regions worldwide.

With respect to actual policy and GATS commitments, the survey reveals that, in all regions of the world, actual policy is substantially more liberal than the GATS commitments. Therefore, it is argued that commitment in services are twice as restrictive as the actual policies. As a result, specific commitment in services does not appear to offer much liberalisation.

Further it has been a long gap since the commitments have been made. Therefore, there is a need to first update the commitment by providing a revised offer, like India has provided in 2005, and it should be made legally binding.

Cooperation in Financial Services

As it is discussed in the previous sections on strict foreign investment policies, restricted commitments in financial services to the GATS, and market access restrictions are responsible for low level of trade in services especially financial services among IBSA countries. These issues highlight the need for cooperation in financial services and in the context of this study banking services among IBSA countries. Therefore, in this section, cooperation in financial services specially banking services will be discussed and how we can deal with the challenges which arises in opening the banking services for IBSA countries.

Generally, financial sectors of developing countries is highly controlled by the respective governments in terms of interest rates and credit allocation are highly regulated. However, the experiences of both the developing and developed countries shows that limited regulation of financial markets is beneficial for maintaining the confidence of the consumer in financial instruments and ensuring financial stability. In this regard, it can be argued that experiences of individual countries will be of interest to others in strengthening the financial sector on their own with the cooperation with other countries.(Rao, 2000).

Further, in the era of globalisation and financialisation no country can survive without integration to the world, and especially when financial crisis can hit any part of the world without prior warning, there is high need of financial sector cooperation between the like-minded countries in order not only to protect them from any future crisis but also to create a strong financial sector.

For example, after the Asian financial crisis in 1997, the countries recognise the need for regional financial cooperation. Having experienced the financial crisis, Asian countries reached a consensus on the need to enhance their own risk management abilities in order to prevent and resolve any future financial crises. The strengthening of regionalism around the world, with the launch of the European Economic and Monetary Union in 1999, and the advancement of economic integration in the Americas, has also led Asian countries to participate actively in regional financial cooperation with a view to protecting the region's interests and boosting its status in the international community.[10]

Since the 1997 crisis, Asian countries started to engage in active discussions of regional financial cooperation. In their efforts to come up with means of preventing and effectively coping with financial crises in the region, the countries have achieved visible results, including the setting up of a regional emergency liquidity provision regime.

In recognition of this fact, countries have focused on ways of developing regional financial markets, for example, by fostering regional bond markets. Financial cooperation in the Asian region is currently being led by ASEAN + 3 and they play central roles in the current regional financial cooperation projects. In ASEAN + 3, countries have established a regime of regional emergency liquidity provision through bilateral swap arrangements.

Banking Sector Cooperation in IBSA

As banking services are the core of financial services, the focus of this study is to promote cooperation in banking services for strengthening the overall financial sector among IBSA countries. Cooperation in banking sector would include: (a) assisting projects, (b) setting up joint ventures, (c) opening up of branches in each other's territory, (d) exchange of information relating to trade and investment opportunities and sharing ideas with respect to making better financial system, (e) training of personnel in specialised fields such as trade financing, and international banking, and (h) holding of international seminars/conferences to discuss banking issues of common interest.[13]

In this respect, it is important to mention that trade in banking services can be promoted in four ways. These are: (i) opening a representative offices/liaison office, (ii) commercial presence (branch office) (iii) Joint venture with foreign banks and (iv) wholly owned subsidiary. However, for the purpose of this study, the focus is on promoting trade in banking services through commercial presence. To highlight the importance of commercial presence, Heinkel & Levi, (1992), discussed the structure of foreign banks in USA and analysed the forms of banking cooperation. They have argued that a foreign branch constitutes a higher level of commitment than any other forms of operations mentioned above. Some literature traces the linkages between financial development, trade policy

reform and economic growth. For example, Levine (1997, 2005) traces the channels by which foreign bank entry influences domestic financial development. However, it is also argued by some researchers that banking sector opening is not free of risks. While bringing the benefits in the form of fresh capital, more competition, new financial products, and improved corporate governance, it can also introduce new financial risks and vulnerabilities (Diaz, 2007).

In practice foreign capital has played a positive role in banking sector recapitalisation, especially in countries where domestic investors were unwilling or unable to inject capital or where the government was reluctant to use public funds for this purpose. For example, in Mexico, foreign banks injected some US$ 8.8 billion between 1997 to 2002, the equivalent of 42 per cent of the system's total capital. In Brazil, the government required European banks to inject hundreds of millions of dollars in fresh capital when taking over Barmindus and Banespa, two of the country's largest financial institutions. This helped Brazil avert a systematic banking crisis in the mid 1990s and reduced fiscal pressure.

The data on intra IBSA trade in financial services reveals that the exposure of financial services specially banking services is low between the IBSA countries. This can also be understood with the help of the data on number of foreign banks present in individual countries. For example, in India only one bank from South Africa is present and none from Brazil. Similarly, in South Africa, India has six branches of banks, but Brazil does not have any branches either in South Africa or in India.

This shows that there is huge opportunity in banking sector cooperation among IBSA countries, as opening up of more branches to each other will not only enhance the trade in services but also it will provide inputs for other sectors. Banking sector cooperation can be promoted by initiating PTA and FTA in services especially in banking services among IBSA countries

Challenges in banking sector cooperation in IBSA

As banking sector is the backbone of overall financial sector for any economy, strong banking sector is the need of the hour specially after global financial crisis. History tells that countries, which have experienced financial crisis, started for cooperation in financial sector in order to strengthen their financial sector to deal with the financial crisis. IBSA countries are like minded democracies with similar issues. Intra-IBSA trade is very low in financial services which has huge potential to grow. To increase the intra-IBSA trade in financial services, banking services trade is a viable option. It is also to be mentioned that the cooperation is low in banking services among IBSA countries as mentioned above. Therefore, there is high need of increasing cooperation in banking services in order to promote better financial sector. Here cooperation means opening up banking sector for each other and promote opening of more banking branches in each other's jurisdiction. However, there are many challenges to open banking services.

Challenges arising due to nature of each economy are general challenges and some are country specific challenges

General challenges are as follows:

- Difference in Licensing criteria
- Limit on number of branches
- Nationality requirement
- Right to appeal regulatory decision
- Capital adequacy ratios. This is a substantial cost for new entrants as capital set aside for adequacy requirements has to be in very liquid assets that bear little return.
- Access to debt financing is another challenge because new entrants cannot issue investment debt instruments given their size.
- Foreign banks are constrained by regulations to open up more branches freely. Acquiring

a meaningful stake in another bank is also not possible due to regulatory constraints.

- Compliance with local regulations is a major challenge.
- Countries do not encourage banks whose business model does not take into account the their objective of financial inclusion.
- Acknowledging and overcoming social challenges is vital for a bank operating in a foreign country.

Country Specific Challenges

India

- Trade and investment corridor in IBSA is not as big as the US-India, Europe-India or Japan-India corridors.
- Foreign banks with less than 20 branches are supposed to lend to the priority sector to the extent of 32 per cent of Adjusted Net Bank Credit. For banks that have 20 or more branches, this figure stands at 40 per cent. Lending to the priority sector includes lending to agriculture, micro and small enterprises, and providing export credit and advances to weaker sections of the society. Meeting the priority sector lending targets is especially difficult for foreign banks, given the high NPAs and defaults associated with this sector.
- A WOS would have to be in the form of a locally incorporated entity. This will result in banks losing the advantages of a branch structure (such as greater operational flexibility, support from the parent, reduced corporate governance requirements, etc.). Such new entities are also likely to attract significant tax liabilities that arise with operating a WOS.
- Highly competitive market in India, inability to distribute across the country because branches can't be opened freely
- Dynamic and competitive market, price sensitive customer leading to low margins
- Requirement of having local partner is also a challenge in India as local partner is not really interested in starting a business but more to just deploy or rent capital to take advantage of compulsory requirement of having an Indian partner.
- FDI norms and consequent high valuations.
- Thus, foreign banks that are looking to offer very specialised banking services in India must apply for a universal banking license that mandates the roll-out of full-fledged banking services in the country. Consequently, giving precedence to financial inclusion may not be viable for all foreign banks entering the banking sector

Brazil

- The Brazilian banking market is still big and unexplored, so banks tend to spend the energy to expand locally. Due to culture, geographical and language issues the natural preference is to expand first in other Latin American countries.
- The weakness of the currency also is another important factor for the internationalisation of a Brazilian Bank.
- A Bank can only seek expansion in foreign jurisdiction after operating for five years' in Brazil. Also it needs to show a business plan which is approved by the central Bank.
- The second challenge is culture differences and distance. Finally, Brazilians tend to be more American and European centric. As a consequence, there is less information of investment in India.

South Africa

- Capital adequacy ratio is a substantial cost factor for new entrants as capital set aside for adequacy requirements has to be in liquid assets that bear little return. Rs 250 million are required as capital.
- Funding remains a major problem in South Africa specifically for small enterprises and new entrants with no track record.
- Access to debt financing is another

challenge because new entrants cannot issue investment debt instruments given their size.

- Capital adequacy ratios have to be maintained on an ongoing basis. This is a substantial cost for new entrants as capital set aside for adequacy requirements has to be in very liquid assets that bear little return.
- Only one banking licence (Fin bond Mutual Bank) has been issued in South Africa in 15 years.

Conclusion

The objective of this study is to promote banking sector cooperation among IBSA countries to strengthen the financial sector and banking sector. It is clear from the above discussion that share of trade in financial services is very less in overall services trade of IBSA and also that the representation of commercial presence of banks in each other's jurisdiction is very negligible. This is due to restricted commitment in banking services in GATS by IBSA countries and stringent foreign investment policies for commercial presence in terms of minimum capital requirement, licensing criteria, nationality requirement, etc. This shows that there is need to liberalise investment policy in financial services and utilize the huge potential of opening the banking services in terms of making financial system more resilient and also promoting overall trade. Based on the above analysis and challenges observed in opening the banking sector, following points can be taken for further consideration to overcome the challenges and promote cooperation in banking services in the form of commercial presence.

A liberal trade understanding in banking services among IBSA countries is essential to promote cooperation in banking services and more branches can be opened among IBSA countries.

- Relaxation in minimum capital requirements for smaller banks or financial services institutions in order to encourage more investment in banking services
- Exchange of information relating to trade and investment opportunities in banking sector and to enhance the skills of financial services officials.
- An informal forum for cooperation can be created. For example, organized a meeting of senior banking and financial officials of IBSA countries.

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5

IBSA Energy Transformation Outlook: The Role of Rooftop Solar

Karin Kritzinger*

Introduction

This chapter focuses on the electricity generated from the installations of solar photovoltaic (PV) panels on the rooftops of privately owned buildings and the effect these have on the electricity system. These rooftop PV installations are no longer considered novel and the potential technical implications on the electricity grid are known. However, the financial implications and resulting customer and utility behaviour is often not as well understood. The self-generation of electricity from rooftop PV installations will reduce the income of the electricity utility, but might not equally reduce their cost to provide electricity. As customers buy less electricity, the utility is forced to increase electricity tariffs, which in turn leads to customers buying even less electricity. This phenomenon is referred to as the "utility death spiral". This has particular relevance for developing countries where there is often cross subsidisation through electricity tariffs. This cross subsidisation (unintentionally) means that it is more viable for high income customers (who also have the necessary capital available) to install rooftop PV resulting in less income for the utility from these higher paying customers. However, it is also these same higher paying customers who are more likely to be the first movers in the forecast move towards a higher level of electrification, mostly for heating and electric vehicles. This "electrification of everything" and the move towards more interconnectedness, (between regions, between countries and even global interconnectedness) is touted as a major component for the decarbonisation of the energy sector.

Against this background, this paper unpacks the contribution and impact that the installations of rooftop PV might have on

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the business model of electricity utilities. This research also offers an outlook where these installations might contribute to a stronger, more resilient and more interconnected electricity grid in the context of the IBSA countries by considering the complex financial, technical and behavioural dynamic in the electricity sector.

This paper provides an analysis of local electricity generation and demand in India, Brazil and South Africa and compares this to global trends in Section 0. In Section 0, the business case for rooftop PV is discussed, while Section 0 provides statistics on recent developments in the rooftop PV markets of India, Brazil and South Africa compared to international trends. Section 0 concludes the paper and provides an indication for the future of rooftop PV installations in the IBSA countries.

A PV system supplies solar electricity by means of photovoltaic panels. These systems consist of the PV panels (that convert sunlight directly to electricity) plus inverters (to change the electric current from DC to AC) and the necessary cables and mounting equipment. PV systems are considered a mature technology and is used for mainstream electricity generation.[1]

There are a number of applications for PV, ranging from very small systems, mostly used for electricity access in remote areas, to industrial-scale PV power plants. This research is, however, focused on PV systems installed on the rooftops of buildings that are connected to the electricity grid. The potential for this application is gaining popularity with policymakers worldwide as a way to move towards a greener and less carbon intensive electricity sector.

The installation of rooftop PV lowers electricity purchases from the utility, often leading to increased per unit cost for the remaining electricity demand. The utility either becomes the provider of last resort – forced to supply electricity only to those who can't afford the high upfront cost of PV or to supply to all customers only when the sun is not shining and the batteries are depleted. As the existing intermittent customer usage will be exacerbated by the intermittent solar electricity generation, the utility will also be expected to supply electricity to an increasingly fluctuating demand for less income. This leads to the utility increasing the electricity tariff, incentivising more rooftop PV installations. This vicious cycle is referred to as the "death spiral" of the traditional utility and is also the reason that PV is seen as a "disruptive" technology.

However, as it is more difficult to individually maintain the instantaneous balance between electricity supply and demand in small and isolated power networks (i.e. an individual building) absolute grid-defection (providing electricity with PV plus batteries and a diesel generator) will only make financial and technical sense where electricity rates are very high or where the intermittency of the electricity supply is such that own provision of electricity is considered a more reliable alternative.2 It is also generally accepted that due to aggregation, grids with a higher level of interconnectivity can accommodate higher levels of intermittent RE, thus making the system as a whole more "green".

If utilities can provide reliable and strengthened grids that accommodate rooftop PV installations, and if they are perceived by the electricity customers as a better alternative than an off-grid solution, then the customers with rooftop PV will be more likely to stay grid-connected, leading to a "greener" and more stable grid.

The aim of this paper is to provide insight into the rooftop PV development in IBSA countries and analyse the potential impact on the financial viability of the electricity system. The objective of this paper is that policy-makers will be able to make more informed decisions regarding the promotion of this technology.

The rest of the document is set out as follows; Section 2 provides the necessary background of electricity generation and demand globally as well as specific to IBSA. In Section 3, the business case for rooftop PV is discussed both from the utility as well as from the electricity customers' perspective. This business case is dependent on the solar resource in the specific location. The cost of the PV installation and the applicable electricity tariff and all these issues are addressed in this section. In Section 4, the PV market development worldwide as well as specifically in India, Brazil and South Africa is discussed, with an emphasis on the development of the rooftop PV market. Section 5 provides an analysis of the future outlook for rooftop PV investment and how these projected future installation might affect the electricity markets. Section 6 concludes the work.

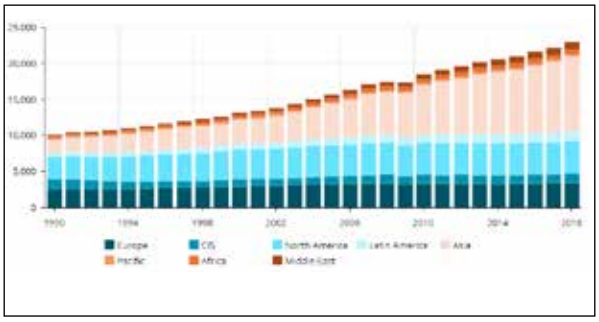
Electricity generation and demand Global scenario with a focus on IBSA

This section, provides an analysis of the change in global electricity demand and generation over time as well as the same for the IBSA countries.

Electricity demand

The demand for electricity worldwide is increasing despite the transition to more energy efficient devices as well as energy saving. As is clear from Figure 1, the biggest contributor to this growth in demand was Asia.

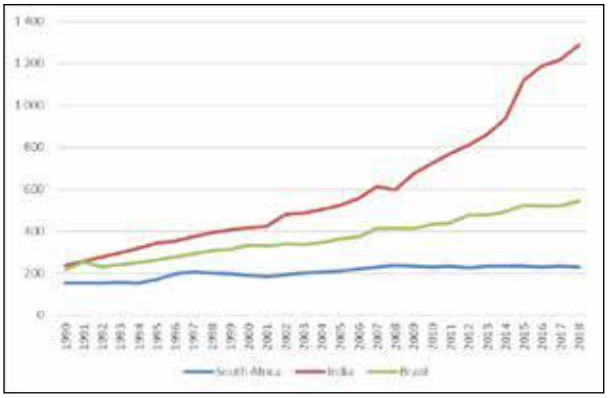
Figure 1: Global electricity consumption for 1990-2018 in TWh per year



Source: (Enerdata, 2019)[3]

The electricity demand in Brazil grew by a modest 3.5 per cent from 1990 to 2018 while the electricity demand in South Africa grew by an average of 2.3 per cent from 1990 to 2008. The electricity demand for the period 2009-2018 in South Africa has been relatively stable, contracting by an average of 0.1 per cent per year. In contrast to this, the electricity demand in India has increased at a rapid rate of over 6 per cent per year since 1990 and continues to grow year-on-year. (See Figure 2).

Figure 2: Total electricity consumption per year in TWh for IBSA countries 1990-2018



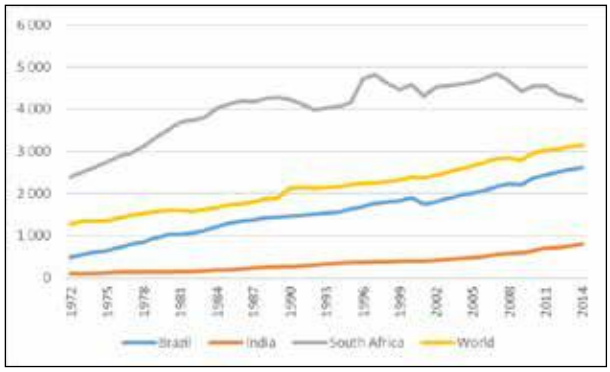
Source: Author's compilation from official sources.

The electricity consumption per capita has also been steadily increasing globally since the 1970s. Whereas the electricity consumption per capita in Brazil and India are both well below the world average, the electricity consumption in South Africa, although declining in the past ten years, is still well above average. (See Figure 3).

The energy demand in India and South Africa is dominated by the industrial sector, with 44 per cent and 49 per cent of electricity provided respectively to this sector. In contrast, only 10 per cent of the electricity demand in Brazil is used by the industrial sector. The largest demand for electricity in Brazil is from the residential sector, with 45 per cent of the electricity demand for 2018. The commercial sectors in Brazil and South Africa use 23 per cent and 20 per cent of the electricity respectively, while the commercial sector in India only uses 8 per cent. The agricultural sector in India and

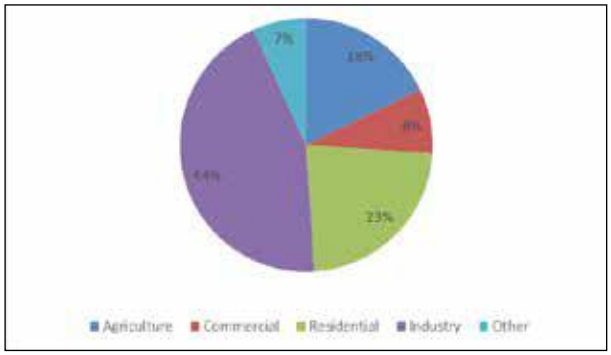
Brazil use 18 per cent and 13 per cent of the demand for electricity respectively, while the agricultural sector in South Africa only uses 3 per cent of the annual demand for electricity. See Figures 4, 5 and 6.

Figure 3: Electricity consumption in kWh per capita per year for the IBSA countries and the world 1972-2014



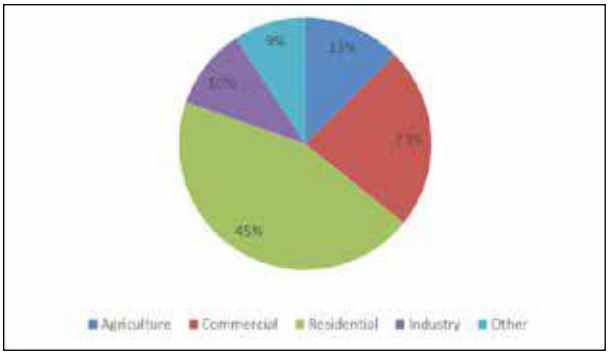
Source: Author's compilation from official sources.

Figure 4: India electricity use per sector for 2017 (CEA, 2017)



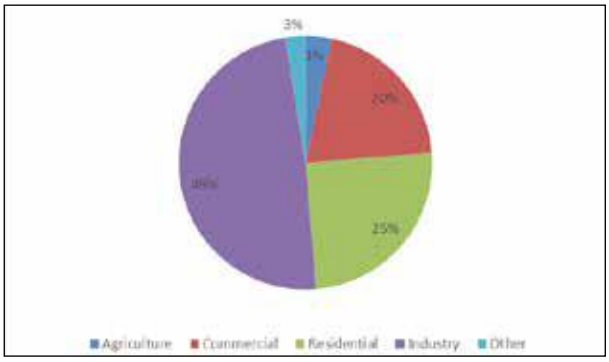
Source: Author's compilation from official sources.

Figure 5: Brazil electricity use per sector for 2018 (Abradee, 2019)



Source: Author's compilation from official sources.

Figure 6: South Africa electricity use per sector for 2018 (Gildenhuys, 2019)

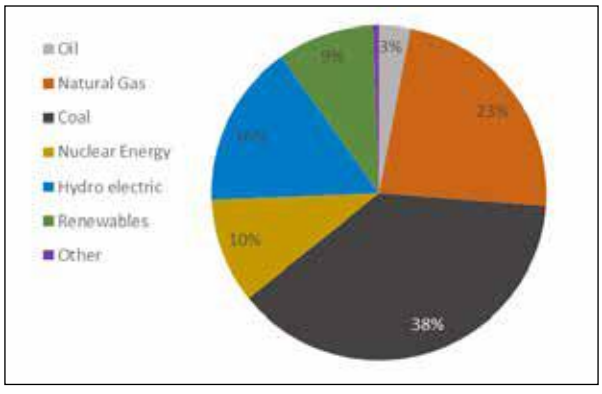


Source: Author's compilation from official sources.

Electricity generation

Even though investment in RE power plants is increasing worldwide, electricity generation is still dominated by fossil fuels, mostly from coal fired power stations. In 2018, 64 per cent of the 26,6 PWh[4] of electricity generated worldwide came from power stations powered by fossil fuels; 10,1 PWh from coal (up from 9,8 PWh in 2017) 6,2 PWh from natural gas (up from 5,9 PWh in 2017) and 0,9 PWh from oil (up from 0,8 PWh in 2017). Nuclear energy (2,6 PWh), Hydro (4 PWh) and renewables (2,2 PWh) made up the rest (BP, 2019; International Energy Agency (IEA), 2018b; REN21, 2019; The World Bank, 2019; United States Energy Information Administration, 2019; World Energy Council, 2016). (See Figure 7).

Figure 7: 2018 world electricity generation by source



Source: Author's compilation from official sources.

Table 1: Electricity generation worldwide and for the IBSA countries for 2017 and 2018 (BP, 2019)

	Oil		Natural Gas		Coal		Nuclear Energy		Hydro electric		Renewables		Other		Total	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Brazil	15.5	11.5	65.6	46.8	25.8	21.9	15.7	15.6	370.9	387.7	94.5	104.5	0.0	0.0	588.0	588.0
India	10.1	10.1	73.5	74.3	1 117.6	1 176.3	37.4	39.1	135.7	139.7	95.8	121.5	0.3	0.2	1 470.3	1 561.1
South Africa	0.1	0.1	1.9	1.9	221.4	225.0	15.8	11.1	0.9	0.9	10.6	12.4	4.5	4.7	255.1	256.0
Total World	870.0	802.8	5 952.8	6 182.8	9 806.2	10 100.5	2 639.0	2 701.4	4 065.4	4 193.1	2 166.5	2 480.4	176.7	153.8	25 676.6	26 614.8

Source: Author's compilation from official sources.

See Table 1 for the electricity generation statistics for India, Brazil and South Africa as well as for the world for 2017 and 2018. While the electricity generation sector in Brazil is dominated by hydro power plants, the sectors in India and South Africa are dominated by electricity from coal fired power stations.

India generates the third most electricity in the world, only surpassed by China and USA (BP, 2019). Although India has been investing heavily in RE power plants, the electricity sector is still dominated by coal fired power stations. The total installed capacity in India was 356 818 MW at the end of 2018. Overall, 46 per cent of this installed capacity is privately owned, 29 per cent is owned by state level power utilities and 24 per cent is owned by central power utilities. While all the nuclear power plants are owned by central utilities, two thirds of hydroelectric capacity is owned at state level, with 27 per cent owned by central utilities and 7 per cent privately owned.

Most of the coal capacity is in the hands of state and central government utilities, with 38 per cent in private hands. However, 95 per cent of RE capacity is owned privately. See Table 2 from (Central Electricity Authority, 2019a, 2019b; Government of India, 2018).

The installed RE capacity as shown in Table 2 consist of 4,594 MW of small hydro, 35,816 MW of wind power, 9,279 MW of Bio-power and 286,679 MW of solar PV.

In addition to these utility scale power plants, there is ~90,000 MW[5] installed capacity of captive power plants[6] in India, ~68,000 MW of which are larger than 1 MW (India Infrastructure Research, 2018; Intelligent Energy, 2012; Nag, 2010; PowerLine, 2017). These generators are mostly fuelled by coal (56 per cent), with RE generators (bagasse, wind, biomass, solar and small hydro), making up 21 per cent (Government of India, 2018; PowerLine, 2017). These captive power plants provide continuous supply of electricity during power interruptions, frequently experienced in India (Gill, Saluja, & Palit, 2017).

In 2018, 81 per cent of the 1 561 terawatt hours[7] of electricity generated came from power stations powered by fossil fuels; 1 176 TWh from coal (up from 1 117 TWh in 2017) and 74 TWh from natural gas (up from 73 TWh in 2017). The electricity generation from oil in India was 10,1 TWh for both 2018 and 2017. Electricity generation from nuclear energy was 39 TWh in 2018 (up from 37 TWh in 2017),

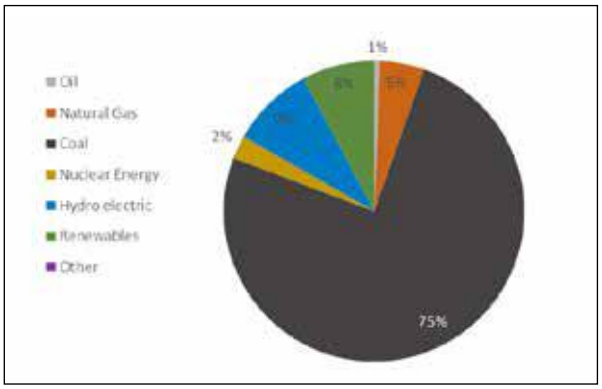
Table 2: All India installed electricity capacity, May 2019 (MW) from

	Coal	Gas	Diesel	Nuclear	Hydro	RE	Grand Total
State	65 367	7 119	364	0	29 879	2 349	105 077
Private	76 518	10 581	274	0	3 394	74 378	165 144
Central	58 820	7 238	0	6 780	12 126	1632	86 597
Total	**200 705**	**24 937**	**638**	**6 780**	**45 399**	**78 359**	**356 818**

Source: Author's compilation from official sources.

Hydro was 140 TWh (up from 135 TWh in 2017) and renewables 122 TWh (up from 96 TWh) (BP, 2019; International Energy Agency (IEA), 2018b; REN21, 2019; The World Bank, 2019; United States Energy Information Administration, 2019; World Energy Council, 2016). See Figure 8.

Figure 8: 2018 Electricity Generation in India



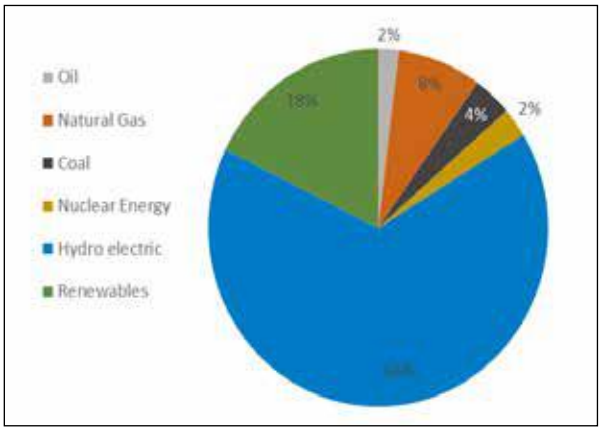
Source: Author's compilation from official sources.

The electricity sector in India serves more than 200 million customers, which includes over 93 per cent of households (The World Bank, 2019) (Indian Power Sector.com, 2019).

Brazil has the largest electricity sector in Latin America, with 167 GW of installed capacity. Hydroelectric power plants make up 61 per cent of this capacity, with the rest provided by fossil fuels (16 per cent), biomass (9per cent), Wind (8 per cent) and nuclear (1 per cent) (Schmidt & Ribeiro, 2019). Brazil also generates the third most electricity in the Americas, behind only USA and Canada, and the eighth most in the world (BP, 2019).

Unlike India and South Africa, electricity generation in Brazil is dominated by large hydro power plants. This dominance makes the Brazilian electricity supply vulnerable to shortages in dry years (The World Bank, 2019). With 92,000 MW installed, Brazil is the country with the third highest installed capacity of hydro power plants in the world, only surpassed by China (319,000 MW) and USA (102,000 MW). 66 per cent of all electricity generated in Brazil in 2018, 387 TWh out of a total of 588 TWh, was generated in these power plants (up from 370 TWh in 2017). The electricity generation from fossil fuels in Brazil was 80,2 TWh for 2018 (down from 107 TWh in 2017); 22 TWh was generated in coal fired power plants (down from 26 TWh in 2017), 47 TWh was generated with natural gas (down from 66 TWh in 2017) and 12 TWh from oil (down from 16 TWh in 2017). Electricity generation from nuclear energy was 16 TWh in both 2018 and 2017 and renewables generated 104,5 TWh (up from 95 TWh in 2017) (International Energy Agency (IEA), 2018b), (The World Bank, 2019), (United States Energy Information Administration, 2019), (BP, 2019), (World Energy Council, 2016), (REN21, 2019). See Figure 9.

Figure 9: 2018 Electricity Generation in Brazil



Source: Author's compilation from official sources.

The bulk of Brazil's power plants are located far from urban demand centres, requiring large investments in transmission and distribution systems. The Madeira transmission line, linking the hydropower plants in the Amazon Basin to major load centres in the southeast, is the longest high-voltage, direct-current line in the world (EIA, 2019).

Brazil and Chile have the highest rates of electricity access in Latin America. The electricity sector in Brazil serves more than 50 million customers, including 97 per cent of all households (The World Bank, 2019).

South Africa generates the highest amount of electricity in Africa[8], about 25 per cent more than the second African country on the list, Egypt (BP, 2019). Although South Africa is investing heavily in RE power plants, the electricity sector is still dominated by coal fired power stations. The total installed capacity in South Africa was 48 000 MW at the end of 2018. Eskom, the state owned electricity utility owns 90 per cent of this generation capacity, with the rest owned by municipalities and independent power producers (Bowen, 2019; Eskom, 2018). See Table 3.

Table 3: Installed electricity capacity in South Africa, December 2018 by owner (MW)

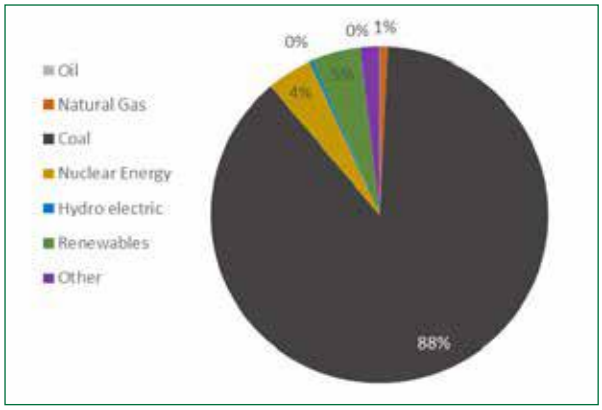
	Eskom	IPPs and municipalities
Coal	40 180	420
Nuclear	1 940	-
Gas/liquid fuel	2 426	1 005
Pumped storage	2 732	180
Hydroelectric	661	14
CSP	-	400
Wind	100	1 980
PV	-	1 474
Landfil	-	8
TOTAL	**48 039**	**5 481**

Source: Author's compilation from official sources.

All electricity transmission in South Africa is done by Eskom. Some metros and local municipalities handle the distribution network in their areas; the rest of the distribution network is under the control of the distribution arm of Eskom.[9]

In 2018, 89 per cent of the 234 TWh of electricity generated in South Africa came from power stations powered by fossil fuels; 206 TWh from coal (up from 204 TWh in 2017) and 1,7 TWh from natural gas (similar to 2017). The electricity generation from oil in South Africa was 0,1 TWh for both 2018 and 2017. Electricity generation from nuclear energy was 10 TWh in 2018 (down from 15 TWh in 2017), Hydro Power was 1 TWh (similar to 2017) and renewables 11 TWh (up from 9 TWh) (Bowen, 2018, 2019; CEIC, 2019; Enerdata, 2019; Eskom, 2018; Index Mundi, 2019). See Figure 10.

Figure 10: 2018 Electricity Generation in South Africa



Source: Author's compilation from official sources.

As can be seen in Table 3, most of the electricity generated from renewable resources in South Africa came from power plants owned by independent power producers. In 2018, 1,031 TWh of electricity was generated in CSP plants, 6,47 TWh in wind farms and 3,28 TWh at large PV plants (Bowen, 2019). Only large scale power plants are included here, and not the electricity generation from rooftop PV plants, which is seen as negative demand.

The business case for rooftop PV and experience in IBSA

It is undisputed that when electricity from solar PV replaces electricity generated from fossil fuels this could play a major role in our transition towards a greener and more sustainable electricity system. New electricity generation from PV could also strengthen energy security, access to energy and socio-economic development while reducing air pollution as well as other environmental impacts (Masson & Kaizuka, 2018; REN21, 2019). For this reason governments and utilities

worldwide are not only accommodating these installations, but are also actively encouraging them (Hakhu, 2019; Okunlola et al., 2019). However, if utilities are not well prepared for these installations, not only could their financial sustainability be at risk, but the stability of their electricity system could also be negatively impacted (Fritz, 2013; Andrew Janisch, Euston-Brown, & Borchers, 2012; N. Korsten, Brent, Sebitosi, & Kritzinger, 2017; Kritzinger, Meyer, van Niekerk, & Scholtz, 2015; Mararakanye & Bekker, 2019; Mararakanye, Kritzinger, Steyn, & Rix, 2018; Scholtz, Muluadzi, Kritzinger, Mabaso, & Forder, 2017; Trollip, Walsh, Mahomed, & Jones, 2012).

This section provides an overview of the financial and technical implications that rooftop PV installations might have from both the utility as well as from the electricity customers' perspective.

Private investment in PV from the utility perspective

Rooftop PV installations on private buildings might impact the technical operations of the electricity utility and it might also impact their finances. These impacts are described in this section.

Technical implications

Electricity has the unique characteristic that it needs to be consumed at the moment it is generated.[10] Due to the size of our interconnected electricity systems, this fact is not always evident for the electricity consumer. It is the responsibility of the electricity transmission and distribution utilities to balance the generation and consumption of electricity in real time. However, the integration of variable renewable energy sources, such as wind and PV, adds complexity to the system. These new systems have variable distributed generation profiles added to the variable distributed demand profiles. The fluctuating electricity demand of individual consumers becomes reasonably predictable with aggregation, as consumers switch loads on and off independently of each other. However, variable energy sources only smooths out with aggregation over a large geographic area, as the sun tends to shine similarly in a specific geographic area and the same for the wind blowing. Electricity utilities also traditionally use this aggregated demand of customers in their network design. This means that the substation capacity is often much lower than the sum of the individual customer capacities feeding from that substation. However, if PV is installed on the roofs of all of these individual customers up to the individual capacities, it should be clear that there will be a system overload when the sun is shining equally on these systems and the individual loads are not all high enough to absorb this generation.[11] Thus, rooftop PV installations could cause power quality problems and equipment damage (Mararakanye & Bekker, 2019). In addition to this, if the utility is not aware of all the rooftop PV installations, and if the PV system is configured such that it will feed back into the grid, when the grid electricity is down, this unexpected electricity flow could endanger utility employees working on these lines (Reinecke et al., 2013).

Financial implications

When an electricity customer installs any new efficient electrical appliances or electricity generating equipment, including a rooftop PV system, this customer will use less electricity and the utility will receive less money from this customer. Should this not be the case and the customers' electricity bills stay the same after these installations, there would be no financial incentive for them to install these technologies.

Depending on the financial and technical structure of the utility, the cost of supplying these customers with electricity might not be reduced in line with the reduction in their income. Depending on the type of generation used, the cost structure of this generation (capital versus running costs) and the cost balance between generation and distribution costs to these customers, it is possible that the cost of supply to the customer installing rooftop PV is independent of the amount of electricity used.

The characteristic of electricity that it needs to be consumed at the moment it is generated, as mentioned in Section 3.1.1, also affects the cost of specific units of energy consumed or generated. Electricity that is generated when there is a demand for it, will be more useful and thus more valuable than electricity generated when there is no demand for it.[12]

Depending on the load profile of the customer installing the rooftop PV, the electricity generated by the PV might not be used on site and will be fed into the grid. Depending on the physical structure of the grid and the load profiles of other loads in the vicinity, this electricity might be evacuated to other loads further away; the specifics of where the generated electricity is used, whether this electricity is curtailed and what the electricity losses are, will also influence the cost of these systems to the utility.

In the case where utilities (i.e. distribution utilities) purchase electricity from other utilities (i.e. generation of transmission utilities), the tariff structure of these purchases will also influence the financial implication of these rooftop PV installations. It goes without saying that the same financial implication as stated above for electricity customers purchasing less from the utility, but the utility costs are the same, is true for utilities purchasing from other utilities, depending on the structure.

The tariff structure of the electricity customers obviously also influence the financial implications for the utility; as electricity generation from PV will most often only reduce the active energy charge and not capacity charges (and definitely not set charges), the tariff structure that the electricity customer is on will influence the impact on the utility finances. This tariff structure will, however, also influence the investment potential of rooftop PV for the customer and will influence installations based purely on financial benefit.

Most utilities in developed countries bill electricity customers in an appropriate cost-reflective manner. An example of this is the declining block tariff structure, where the monthly kWh amount of active energy used is charged at a lower rate for high use customers, in line with their cost to the utility. However, in developing countries, income from electricity sales from high income customers are often used to cross subsidise electricity sales to low income customers. An example of this is the inclining block tariff structure, where the active energy charge is increased for higher amounts of kWh used per month. This tariff structure is popular with utilities for residential customers in South Africa, Brazil and India. This tariff structure is often justified as it might incentivise energy saving, energy efficient appliances and self-generation of electricity. However, this tariff structure also makes it more financially viable for the high electricity users (who usually costs the least per unit to supply with electricity) to install rooftop PV than for electricity customers who use less electricity. For more on tariff structures, see Section 3.5.

Investment in PV from the electricity customer perspective

There are three determining factors influencing the financial viability for rooftop PV; the solar resource, the cost of the system and the electricity tariff for at the specific site of installation.

The solar resource is influenced by the geographic location (town, city) of the PV installation as well some details of the specific site (installation angle and orientation, near shading, roofing material etc.). For more information on solar resource see Section 3.3.

The cost of the installation is influenced by the location of the installation as well as how this capital cost is financed (for more on finance costs and ownership models, see 17 and 17 below. PV installations tend to cost more in areas where there are few installations and thus few installers. PV technology is

Figure 11: Visualisation of the payback period for specific capital costs and active energy charges for an installation that is expected to generate 1500 kWh per kWp per year.

	$400	$700	$1 000	$1 300	$1 600	$1 900	$2 200	$2 500	$2 800	$3 100	$3 400
$0.02	13	23	33	43	53	63	73	83	93	103	113
$0.03	9	16	22	29	36	42	49	56	62	69	76
$0.04	7	12	17	22	27	32	37	42	47	52	57
$0.05	5	9	13	17	21	25	29	33	37	41	45
$0.06	4	8	11	14	18	21	24	28	31	34	38
$0.07	4	7	10	12	15	18	21	24	27	30	32
$0.08	3	6	8	11	13	16	18	21	23	26	28
$0.09	3	5	7	10	12	14	16	19	21	23	25
$0.10	3	5	7	9	11	13	15	17	19	21	23
$0.11	2	4	6	8	10	12	13	15	17	19	21
$0.12	2	4	6	7	9	11	12	14	16	17	19
$0.13	2	4	5	7	8	10	11	13	14	16	17
$0.14	2	3	5	6	8	9	10	12	13	15	16
$0.15	2	3	4	6	7	8	10	11	12	14	15
$0.16	2	3	4	5	7	8	9	10	12	13	14
$0.17	2	3	4	5	6	7	9	10	11	12	13
$0.18	1	3	4	5	6	7	8	9	10	11	13
$0.19	1	2	4	5	6	7	8	9	10	11	12
$0.20	1	2	3	4	5	6	7	8	9	10	11
$0.21	1	2	3	4	5	6	7	8	9	10	11
$0.22	1	2	3	4	5	6	7	8	8	9	10
$0.23	1	2	3	4	5	6	6	7	8	9	10
$0.24	1	2	3	4	4	5	6	7	8	9	9
$0.25	1	2	3	3	4	5	6	7	7	8	9
$0.26	1	2	3	3	4	5	6	6	7	8	9
$0.27	1	2	2	3	4	5	5	6	7	8	8
$0.28	1	2	2	3	4	5	5	6	7	7	8

Source: Author's compilation from official sources.

also highly dependent on economies of scale; larger systems are often much cheaper per unit than smaller systems. For more on cost of PV systems, see Section 3.4. Electricity tariff vary widely between utilities and even between customers from the same utility. The active energy charge part of the electricity tariff has the biggest influence on the financial viability of the PV system. For more on electricity tariffs, see Section 3.5.

A simplified formula to calculate the viability of rooftop PV, is; P = C / (EC x SR), where P is the payback period in years, C is the capital cost per kWp, EC is the active energy charge per kWh (part of the electricity tariff) and SR is the amount of electricity that the installation will generate per year per kWp installed. In an area where the electricity generated from the PV installation will be 1 500 kWh per kWp per year, the applicable active energy charge for electricity for the specific customer is 0,08 USD per kWh and the installation costs 1 400 USD per kWp installed, the simple payback period will be P = C / (EC x SR), 1 400 / (0.08 x 1 500) = 12 years. From this function, it is clear that the payback period is higher for a higher capital cost of the system and for a lower active energy charge. See Figure 11 for a visualisation of the simple payback period (in years) for specific capital costs and active energy charges for an installation that is expected to generate 1 500 kWh per kWp per year. The active energy charge part of the electricity tariff (in USD per kWh) is provided in the left column and the capital cost (in USD per kWp installed) is provided in the top row. To find the simple payback period, draw a horizontal line from the applicable tariff and a vertical line from the applicable capital cost.

Ownership models

The PV on the rooftop of a building is traditionally owned and paid for by the building owner. However, new and innovative ownership models are emerging, for instance where the PV power plant on the roof is owned and maintained by another party and the building owner and/or occupant benefits from the "green electricity" and/or from a reduced electricity cost. These ownership models are only attractive to potential investors when there is a long term (20 years plus) surety of the applicable electricity tariff and where the return on investment of the rooftop PV is high enough for the profit to be shared between the owner of the power plant (the rooftop PV) and the building occupant or building owner (Adepetu, Alyousef, Keshav, & Meer, 2018; Okunlola et al., 2019; Scholtz et al., 2017; Zhang, Vorobeychik, Letchford, & Lakkaraju, 2014).

Financing models

Due to predictability of future electricity generation of a rooftop PV plant and the guarantees provided by PV panel manufacturers, new and innovative financing models are also emerging. If the applicable electricity tariff is also guaranteed for the long term, investors and financial institutions are starting to apply project financing for these rooftop power plants, taking the projects off-balance sheet (Okunlola et al., 2019; Scholtz et al., 2017).

Solar resource

It is essential to know what the available solar resource is to design of a solar PV power plant. The instantaneous solar resource, the solar radiation, is typically measured for a specific point in time in kW/m2. However, because the solar radiance varies throughout the day

and throughout the year, a more useful solar resource measurement includes a time factor and it typically provided in kW/m2/year. The solar measurement map in Figure 12 goes one step further, to include more than merely the solar resource at a specific location, it provides the annual electricity generation from optimally inclined solar PV installations. Factors that affect this potential solar electricity generation include, cloud cover, air quality, temperature, daylight hours.

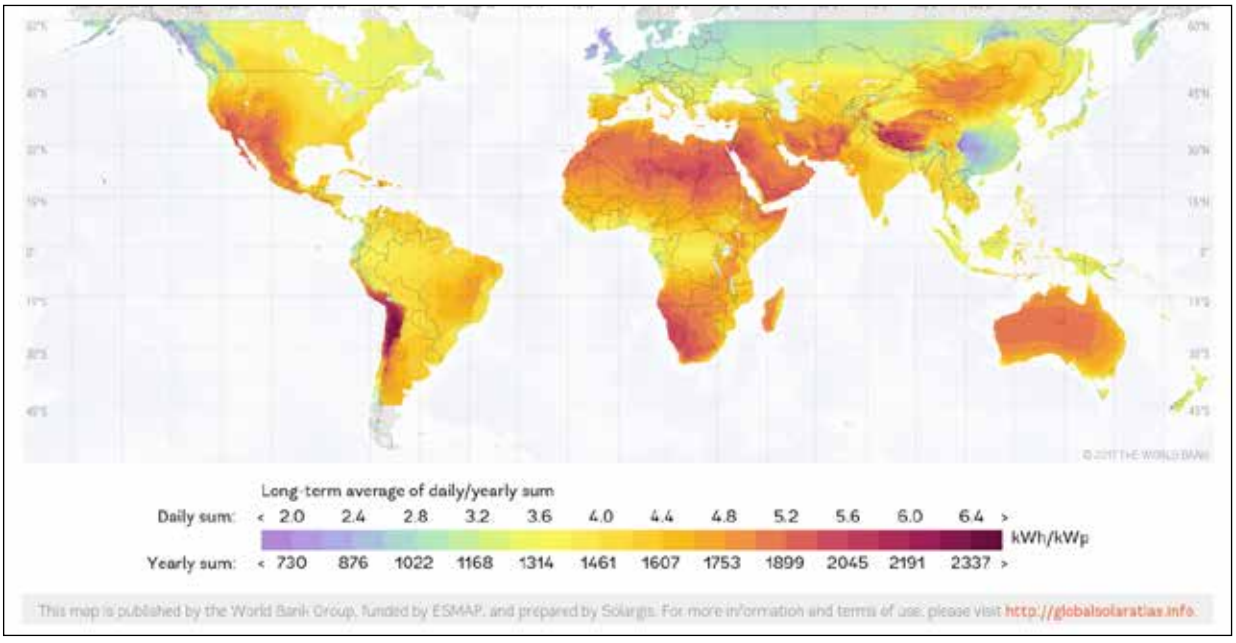
The wide scale adoption of PV power plants in a country is often not aligned with the available solar resource. An example of this is Germany, where there is a high number of these installations, with a comparatively low solar resource (much lower than India, Brazil and South Africa) (Scholtz et al., 2017).

As should be clear from Figure 12, the potential for annual electricity generation from PV power plants range from less than 700 kWh per kWp per year in the northern parts of Europe and Asia to more than 2 000 kWh per kWp per year in Chili, the western parts of USA, Northern and Southern Africa, the Middle-East and some parts of Asia (Solargis, 2019). India, Brazil and South Africa all have an above average solar PV generation potential. More information on the solar resource of these countries is provided below.

India has a great solar resource potential for solar PV electricity generation. The western and northern parts of the country have a slightly higher potential, however, in the areas that have the lowest potential, this is still significantly higher than most countries with a high penetration of PV installations (i.e. Germany) (Solargis, 2019).

Brazil has a good solar resource potential for solar PV electricity generation, as can be seen from Figure 13. The interior of the country has a higher potential, with the coastal areas, slightly lower. However, in the north western part of

Figure 12: Global solar resource map for solar PV electricity generation per year, provided in kWh/kWp installed



Source: World Bank.

the country, that has the lowest potential, this is still high when compared to that of countries with a high penetration of PV installations (i.e. Germany) [16].

South Africa has a great solar resource potential for solar PV electricity generation, as can be seen from Figure 14. The sparsely populated western and northern parts of the country have a very high potential, with the eastern coastal regions having the lowest potential. However, even in these eastern areas, the potential is still significantly higher than most countries with a high penetration of PV installations (i.e. Germany) [16].

Solar PV cost

The cost of solar PV technologies has dropped dramatically over the years, as is evident from popular media reporting (Bischof-Niemz & Fourie, 2016; Scholtz et al., 2017), (IRENA, 2016), (Masson & Kaizuka, 2018). This is also evident in Figures 15 and 16, showing the falling costs of solar PV installations for different applications in the USA from 2010 to 2018 (Authority, Name, & Number, n.d.).

Due to economies of scale, the cost per unit for larger systems are significantly lower than for smaller systems. This drastic reduction in the cost of PV systems can be ascribed to a variety of factors, including; higher panel efficiency, the development of the global PV market, economies of scale as well as market consolidation - mostly towards the manufacturing of solar PV panels in China (Fu, Feldman, & Margolis, 2018; IEA, 2018b, 2018a; International Energy Agency (IEA), 2018a; Kavlak, Mcnerney, & Trancik, 2018).

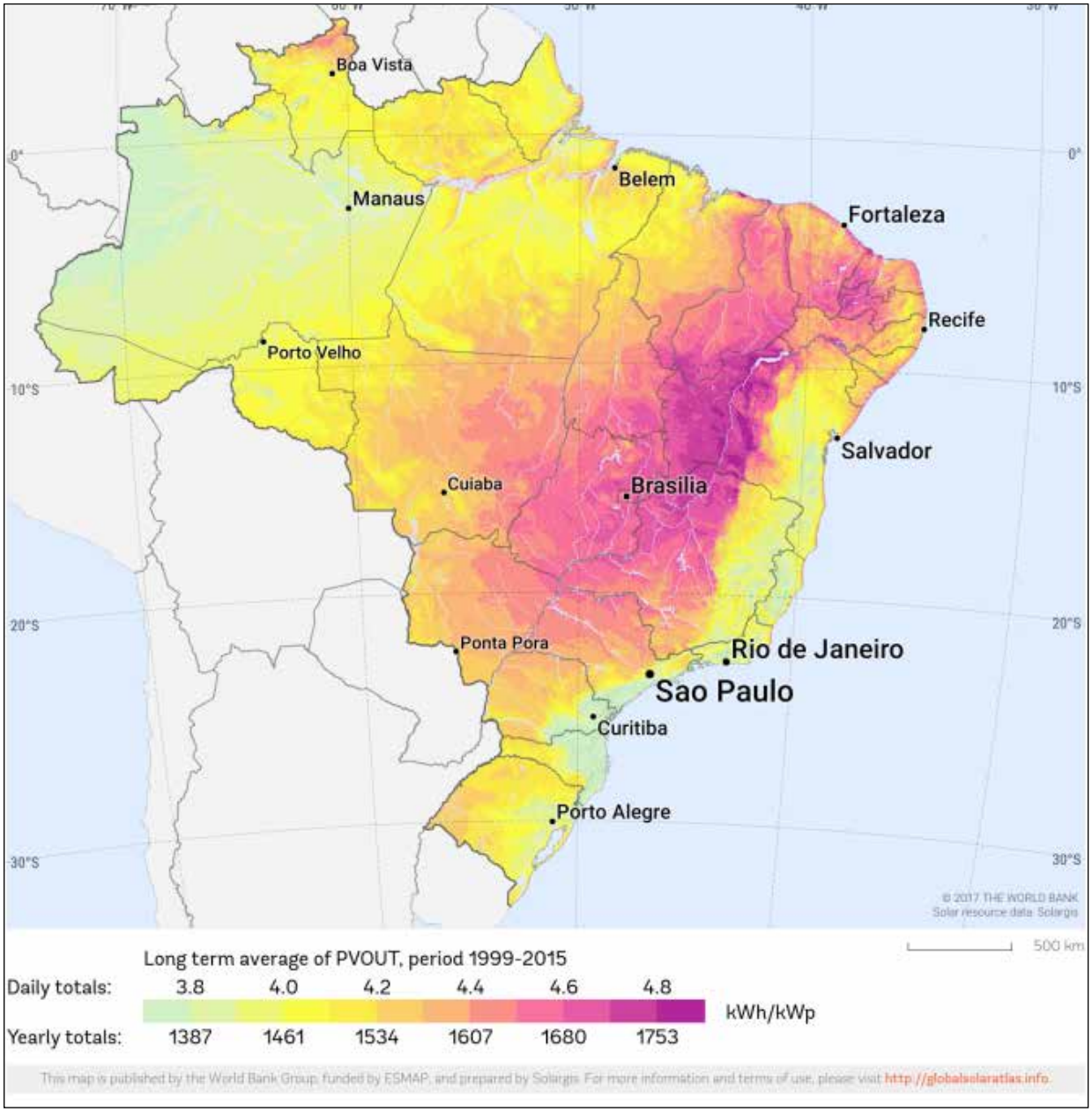
The cost of solar PV is generally provided in two ways; as a capital cost per Wp installed or as a levelised cost per kWh of electricity generated (levelised cost of electricity: LCOE). In this report, the cost of PV installations will generally be provided in cost per kWp installed. However, where the costs are provided in per kWh format, these will not be translated into cost per kWp and will be provided in the formats as in the citations.

NREL (Fu *et al.*, 2018) lists the cost of solar PV in 2018 in the USA as 3 110 US$ per kWp for residential systems, 2 100 US$ per kWp for commercial systems, 1 440 US$ per kWp for fixed-tilt utility-scale systems and 1 470 US$ per kWp for one-axis-tracking utility-scale systems[14]. IRENA lists installed costs of rooftop solar PV for 2016 in Germany as ranging between 1 000 US$ and 3 500 US$ (with a mean of 1 790 per kWp for 1-5 kW systems and 1 550 US$ per kWp for 5-10 kWp system) and between 1 000 US$ and 10 000 US$ in the USA (with a mean of 5 040 per kWp for 1-5 kW systems and 4 600 US$ per kWp for 5-10 kWp system).

In India, you would expect to pay between 650 and 900 US$ per kWp installed (EAI, 2019). According to the Government of India, Ministry of New & Renewable Energy, the benchmark costs for grid-connected solar PV power plants, listed in Rupees in Table 4, range from 860 US$ per kWp installed for small systems in the Special Category States to about 650 US$ per kWp for larger systems in all other areas[15] (MNRE, 2018). For the available capital subsidies, see Section 3.6.

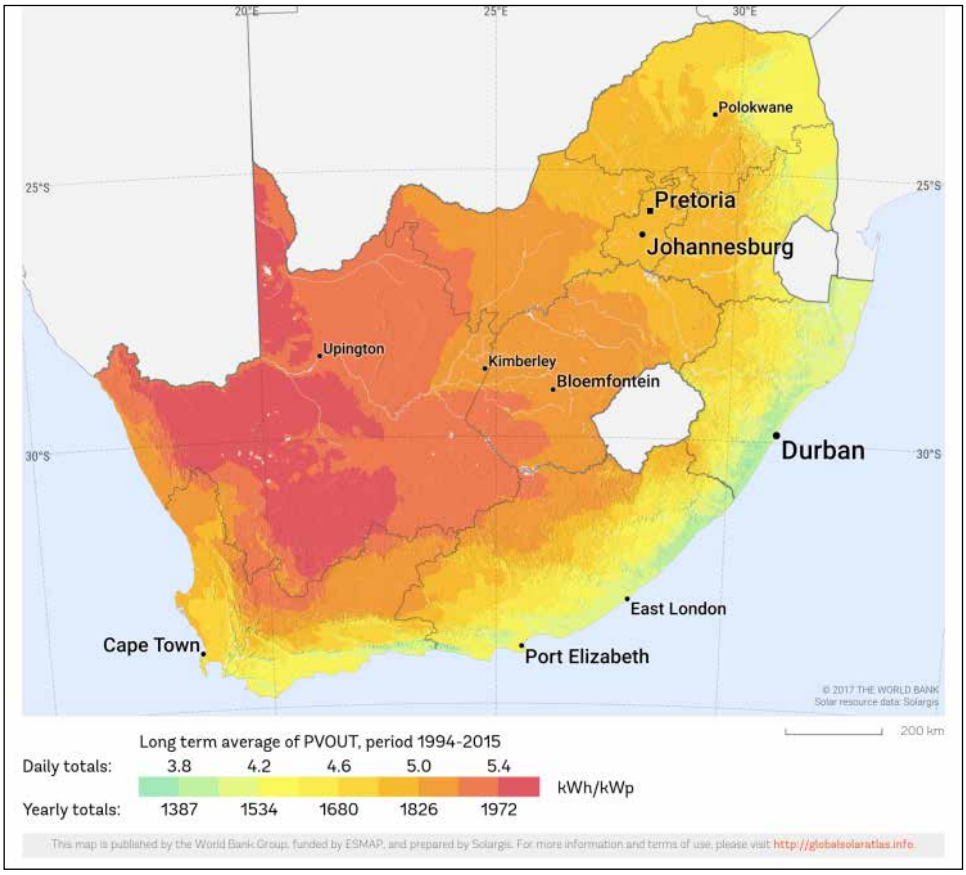
In Brazil, you would have paid to paid between 1 570 US$ and 4 000 US$ per kWp installed for a rooftop solar PV system in 2015[16] (America do Sol, 2019). More recent sources (Herzberg, 2019) quote the price for larger systems as low as 1 000 US$ per kWp installed. Other sources (Greener, 2019) list the price for residential systems in Brazil at under 700 US$ per kWp installed in 2019.

Figure 13: Brazil solar resource map for solar PV electricity generation per year, provided in kWh/kWp installed



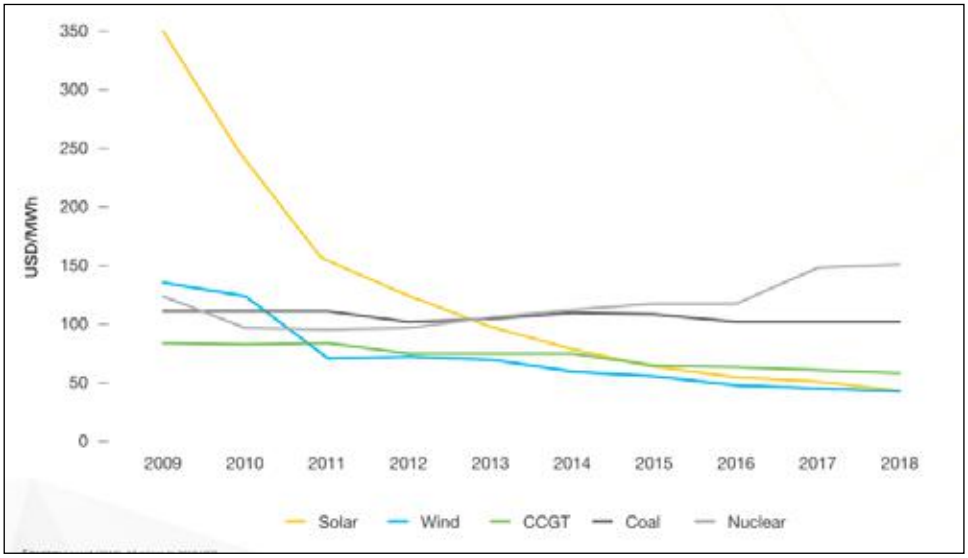
Source: World Bank.

Figure 14: South Africa solar resource map for solar PV electricity generation per year, provided in kWh/kWp installed.



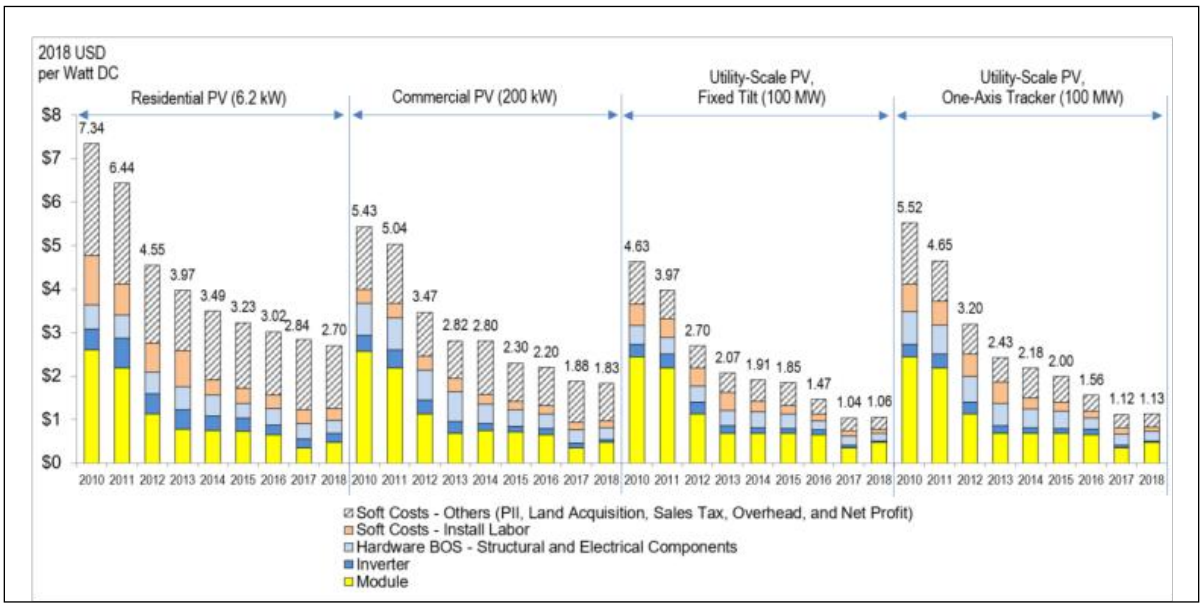
Source: World Bank.

Figure 15: Solar electricity generation cost in comparison with other power



Sources 2009 – 2018 (Schmela et al., 2019)

Figure 16: USA PV system cost benchmark summary (inflation adjusted), 2010 - 2018



Source: Author's compilation from official sources.

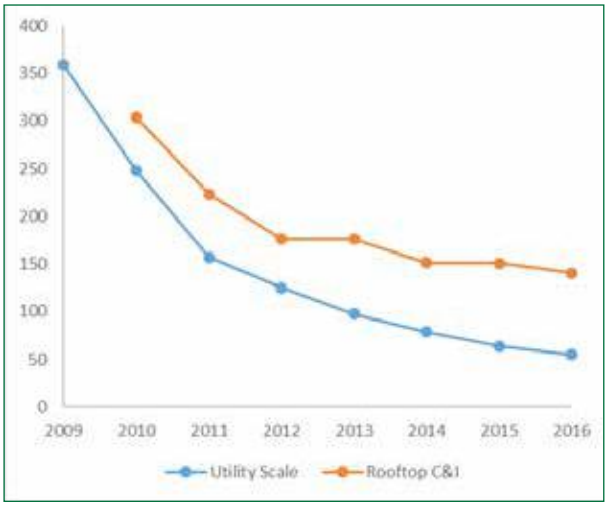
In South Africa, the cost of installing utility scale solar PV plants have come down drastically since 2009, as can be seen in Figure 17, adapted from (DoE, 2018). As can be seen in the figure, the cost of utility scale solar dropped by 85 per cent from 2009 to 2016. The cost of commercial and industrial rooftop PV dropped by 54 per cent from 2010 to 2016.

Table 4: Benchmark costs for rooftop solar PV in India (Government of India, 2019)

Capacity	Benchmark cost (Rs/Wp) other than Special Category States	Benchmark cost (Rs/Wp) for Special category States which includes North Eastern States, Hilly States of Uttarakhand, Himachal Oradesh, J&K and Uts of Andaman & Nicobar Island and Lakshadweep
Above 1 kW and upto 10 kW	54	59
Above 10 kW and upto 100 kW	48	53
Above 100 kW and upto 500 kW	45	50

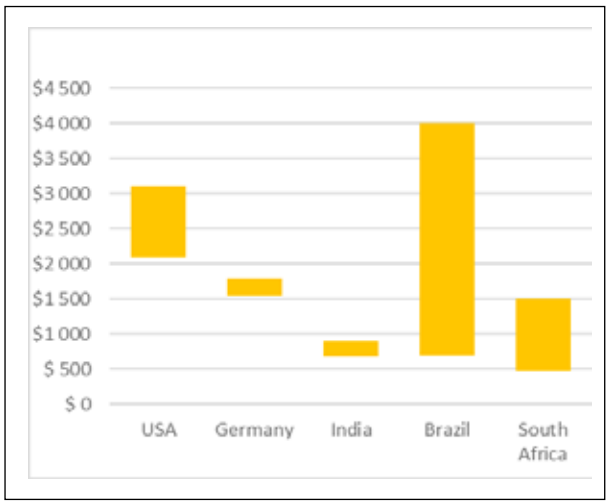
Source: Author's compilation from official sources.

Figure 17: LCOE for solar PV in South Africa, 2009 to 2016 for utility scale and for commercial and industrial (C&I) rooftop installations, in US$ per MWh



Source: Author's compilation from official sources.

Figure 18: Estimated cost for rooftop PV installations in 2019 in USA, Germany, India, Brazil and South Africa in US$ per kWp installed.



Source: Author's compilation from official sources.

By the middle of 2019, it is estimated that a utility scale solar PV plant could be installed in South Africa for as low as 500 US$ per MWp installed. A large (1-2 MWp) rooftop installation on a commercial or industrial property could be installed for as low as 570 US$ per MWp installed. A smaller installation (up to 1MWp) on a commercial property could cost as low as 720 US$ per MWp installed. An installation on a residential property could cost between 1 000 and 2 000 US$ per kWp installed, depending on the size, the location and the complexity of the installation17 (Businesstech, 2019), (GreenCape, 2016; Kritzinger et al., 2015; Scholtz et al., 2017), (IRENA, 2016; Okunlola et al., 2019).

For a summary of the estimated cost of rooftop solar PV installations in the IBSA countries in 2019, see Figure 18.

Electricity tariffs

Electricity worldwide is usually sold at a predetermined rate, an "electricity tariff". These tariffs are generally made up of; fees per time unit; capacity fees and active energy charges.

Fees per time unit are set fees charged per day, per week or per month and does not depend on the amount of electricity consumed.

Capacity fees are most commonly charged for the maximum electrical capacity needed by the customer, irrespective of whether this capacity is ever utilised. This fee is usually charged as a "notified maximum demand". Penalties are usually imposed should this notified demand be exceeded in a specific time period. Capacity fees are also often charged for the actual peak demand over a time period.

Typically this customer peak demand is only logged in specific time periods when the grid is under strain.

The active energy charge or "per kWh" charge, is the fee that people are most familiar with. This fee can be charged at;

- a set rate per time period;
- an inclining block tariff, where the price per unit goes up the more is used in a time period;
- a declining block tariff, where the price per unit goes down the more is used in a time period;
- a time-of-use (TOU) tariff, where units used in specific high demand time periods (either daily or seasonally or a combination of these) are charged differently;
- a dynamic TOU tariff, where the cost per unit dynamically changes according to the demand for electricity at any specific time.

Simple mechanical electricity meters, that are manually read (usually on a monthly basis) as well as simple electronic prepaid electricity meters (kWh "units" of electricity is paid for and loaded and the meter counts down the units as these are consumed) are usually only able to measure the active energy used by the customer and does not keep a record of the time of day that this energy is used nor of the electrical capacity utilised. Most residential electricity customers worldwide still have these simple meters installed and are thus only charged for a combination of fees per time unit (daily, weekly or monthly access charges); capacity fees (size of the trip switch); and an active energy charge per kWh.

Larger electricity consumers, such as commercial and industrial customers, usually have more sophisticated electricity meters installed and the utilities are thus able to charge these customers with a more sophisticated tariff. This tariff will more often include all three charges as described above.

When rooftop PV is installed on an electricity customer's property, depending on the specific regulation and the specific electricity utility involved, the electricity customer either stays on the same tariff structure as before the installation, or the electricity tariff is changed to a new tariff structure. These new electricity tariffs that allow for the rooftop PV installation are referred to as small-scale-embedded-generation (SSEG) tariffs. These SSEG tariffs can be based on net-metering, where the electricity consumed and the electricity fed back into the grid are charged at the same rate. This could mean that a rooftop PV installation can generate electricity all day and feed this into the grid and then the property owner can use the grid electricity in the evenings at the same cost. These net metering tariffs are sometimes more sophisticated and are charged at a TOU rate, which could mean that the electricity fed back into the grid is paid at a different rate than the electricity used, depending on the time of the day (or the time of year).

In areas where the installations of rooftop PV is actively encouraged and financially incentivised, the tariff paid for electricity fed back into the grid could be paid to the customer at the same rate (net metering) or at a higher rate (when the installations are actively encouraged than the electricity bought from the utility. More often though, the excess electricity fed into the grid is paid out at a lower rate than what the customer typically pays for electricity consumed from the grid. This differentiation in the tariff is due to the cost that the utility still incurs to supply the customer with electricity. As stated in Section 3.1.1, electricity has the unique characteristic that it needs to be consumed at the moment it is generated. For this reason, electricity generated at different times of the day, week or year, has different uses, is generated at different costs and will be bought at different rates. For illustration, one might be perfectly willing to switch off all lights at night, or do the washing at a different time of the day, but maybe not so willing to switch of an air conditioner during the hottest time of the day or the stove while preparing an evening meal.

Electricity customer classes that typically use electricity in the day time when the sun is shining and do not close down on weekend or public holidays are best suited for rooftop PV installation as all of the electricity generated could be self-consumed. Businesses that typically close down over weekends or during holidays will need to ensure that electricity can be fed into the grid in their area and how they will be compensated for this. Residential electricity customers typically do not self-consume a high percentage of rooftop PV electricity generated due to their dis-aggregated electricity usage patterns. Excess electricity generated could also be stored in battery systems, if these are installed and have the capacity available. It should be noted that there cannot be compensation for electricity generated during a power cut. This electricity will be curtailed, if not used on site, and this income will be lost.

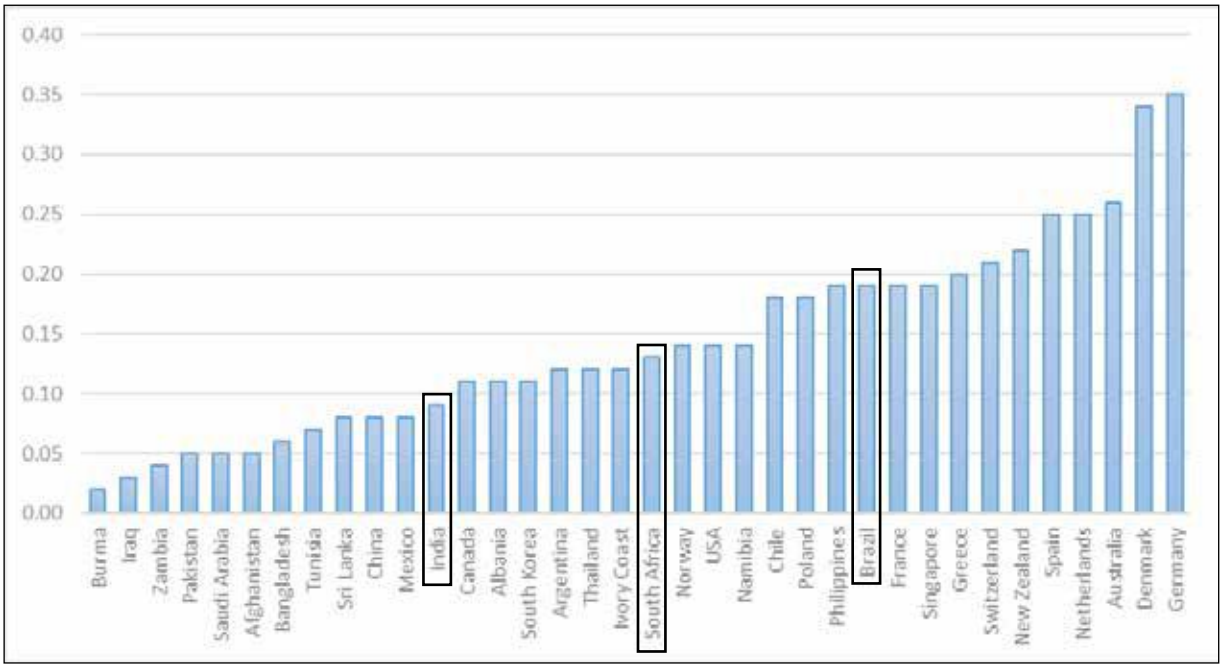
If the tariff regime for residential customers (with or without rooftop PV) is changed from a simple energy-based tariff (that might also include set charges) to a more complex tariff (TOU, peak demand charges etc.), then the cost of the new, more sophisticated, meters as well as the cost of the new, more sophisticated, billing regime should be weighed up against the implications of the desired outcome. Research has shown that electricity consumption behaviour is not easily changed in the residential sector. This might be due to the low cost of electricity, due to the inelasticity of electricity pricing, due to a delayed effect not yet measured or other unknown factors (de Lange, 2008; EU-INOGATE Programme, n.d.; Hobman, Frederiks, Stenner, & Meikle, 2016; Kelly, 2015; Mendonca, Jacobs, & Sovacool, 2010; Presutti, Bruce, & Macgill, 2017; Salvoldi, 2008; Sorasalmi, 2012).

Internationally, electricity tariffs differ according to the cost of electricity generation, transmission and distribution as well as to what extent the cost of electricity might be subsidised. The individual tariffs that electricity customers pay could also differ according to their customer class and / or usage patterns. It is quite common that some high-income / high-earning electricity customers cross-subsidise other low income / low earning electricity customers. In some countries, the income from electricity is also used to cross subsidise other municipal services.

The residential electricity tariffs in India, South Africa and Brazil are typically based on the ability to pay as well as on usage. Low income electricity customers and customers who use a low amount of energy per month typically pay less per kWh than higher electricity users. The aggregate electricity tariff for a few key countries, including the IBSA countries, can be seen in Figure 19. From this figure it is clear that of the IBSA countries, India has the cheapest electricity and in case of Brazil it is the most expensive.

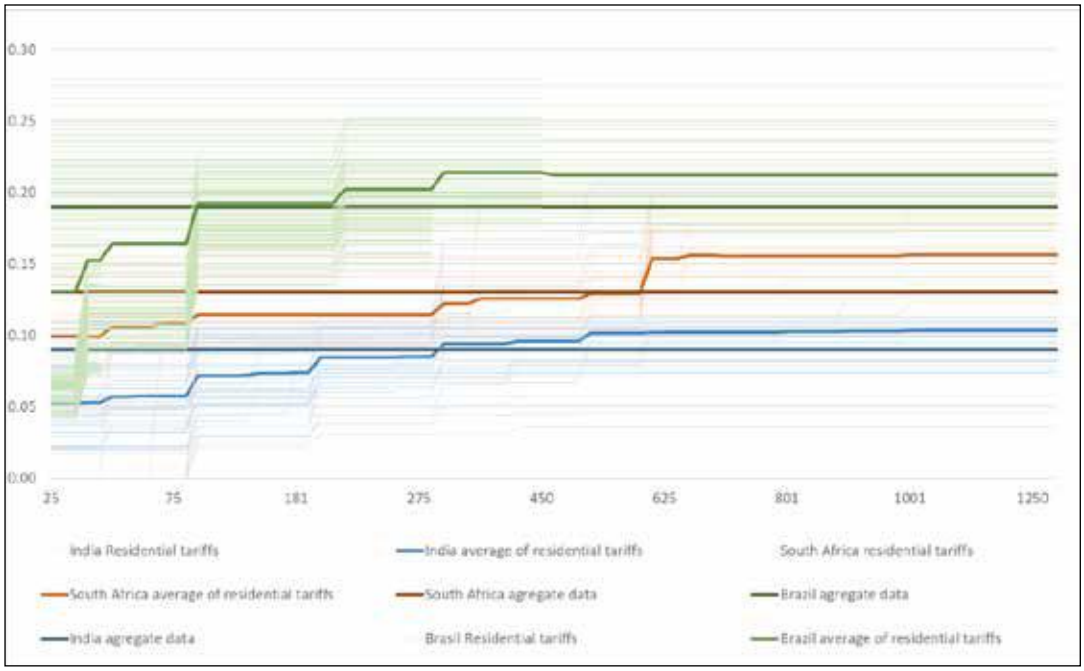
Figure 20 provides an analysis of the energy (kWh) part of residential electricity tariffs in India (blue), South Africa (brown) and Brazil (blue). The average of these electricity tariffs is also provided with a bolder line, as well as the aggregate electricity tariff for the country according to (GlobalPetrolPrices.com, 2019). The data for the individual distributors in India and South Africa was collected from the websites of the distributors and other aggregation websites (Bijli Bachao, 2019; City of Cape Town, 2019; City of Ekurhuleni, 2019; City of Tshwane, 2019; Eskom, 2019; eThekwini Municipality, 2019; NMBM, 2019; Stellenbosch Municipality, 2019). The data for Brazil was collected from the Brazilian Electricity Regulatory Agency (ANEEL) (ANEEL, 2019). The first units of electricity used per month are often charged at a lower tariff in all three IBSA countries. The cheapest electricity tariffs, including some free units per month, are often only available for indigent electricity customers. However, in India and Brazil, active energy is most often charged at inclining block tariffs where unit cost rise as consumption rises.

Figure 19: Aggregated electricity tariffs in US$ per kWh (Y-axis) for selected countries with the IBSA countries highlighted.



Source: (Bradshaw & Martino, 2019).

Figure 20: Residential Electricity Tariffs in IBSA



Source: (GlobalPetrolPrices.com, 2019).

Note: The X-axis shows the kWh used per month. The Y-axis is the cost per kWh converted to US$[18]

In India, electricity customer typically pay their electricity bills to distribution utilities, referred to as DISCOMS. These DISCOMS in return pay the generators for the electricity that they on-sell to their customers. The tariff that the end customer pays is set either by the Central Electricity Regulatory Commission (CERC) or the State Electricity Regulatory Commissions (SERCs), depending on the geographic area serviced by the DISCOM (Bhattacharyya & Ganguly, 2017).

SSEG is allowed to feed into the grid in most areas in India. The tariffs for net or gross metering, where available, is set every year by the relevant electricity regulation commission and is typically equal to the average cost to serve of the DISCOM (APERC, 2018, 2019; Garg et al., 2014). In most Indian states, rooftop PV owners have the advantage of exemptions that include the energy export fee and cross-subsidy surcharges. However, some states have recently reduced these concessions (Buckley, 2019).

In Brazil, electricity customers typically pay their electricity bills to distribution utilities. The tariffs are set annually by ANEEL (ANEEL, 2019). Indigent electricity users are charged at an inclining block tariff based on their usage and typically pay less taxes on these charges, while higher earning residential customers are charged a (higher) flat energy charge (Simone & Salles, 2017). In months where the electricity generation in Brazil is under stress, electricity is charged at a higher rate. Every month is flagged by ANEEL as either green, yellow or red. In green months, the electricity is charged at the published rate, in yellow months, electricity consumers pay 0.004 US$ more per kWh consumed. In tier 1 red months they pay 0.04 US$ more per kWh consumed and in tier 2 red months they pay 0.06 USD more per kWh consumed. In 2018, January to April plus the month of December were green months, May and November were yellow and June to October were classed as red months. January to April plus the month of June was classed as green months in 2019 and May and July have so far been classed as yellow months (Ying, 2019).

To encourage the installations of rooftop PV, the electricity generated from these installations have been free from taxes[19] since 2015. This in effect means that the electricity fed back into the grid is compensated at the same rate as the electricity used from the utility and the customer will only be charged these taxes on the excess units purchased. Some other concessions for rooftop PV customers include; reduced network connection costs; excess electricity units only expire after sixty months (and these units could possibly be used at other electricity points in the same concession area (referred to as remote-self-consumption). Consumers are also allowed to form a consortium and use the electricity generated to reduce bills of all consortium members (Assunção & Schutze, 2017).

In South Africa, electricity customers typically pay their electricity bill either to the distribution arm of Eskom, the public electricity utility company, or to their local municipality or metro. These municipalities and metros purchase the electricity from Eskom and resell to their customers. Indigent electricity customers are typically provided with between 40 and 100 free units of electricity per month and the units exceeding this is typically charged at an inclining block tariff. Higher income customers are also most often charged at an inclining block tariff. The active energy charge part of the electricity charge makes up the largest part of the electricity bill for residential customers, although this practice is starting to change, with many distributors introducing set charges to their residential customers. Industrial and Commercial electricity customers in South Africa are typically charged with a mix of capacity, time-based and active energy charges. The active energy charges typically make up about 50 per cent of the electricity bill for commercial and industrial customers.

Although the installation of rooftop PV is not actively encouraged in South Africa, installation guidelines and SSEG tariffs are available in most major cities as well in some smaller towns.

Electricity customers with rooftop PV are typically expected to apply at their distribution company, to install bi-directional meters (unless no electricity will be fed back into the grid) and to pay the distribution company for these meters. These SSEG tariffs typically consists of a time-based component and active energy charges. The electricity fed back into the grid is typically refunded at the same level as what the distributer purchases electricity from in that time slot, which is typically a lower charge than the electricity consumed. In some cases, the SSEG tariff is a TOU tariff ((SEA), 2016; Baker & Phillips, 2019; City of Cape Town, 2019; City of Ekurhuleni, 2019; City of Tshwane, 2019; Eskom, 2019; eThekwini Municipality, 2019; A Janisch, Borchers, & Africa, 2012; Andrew Janisch et al., 2012; N. Korsten et al., 2017; Nikkie Korsten, Kritzinger, & Scholtz, 2018b, 2018a, 2018c; NMBM, 2019; Scholtz et al., 2017; Stellenbosch Municipality, 2019).

Policies and financial incentives to promote rooftop PV

The International Solar Alliance (ISA), initiated by India, is an alliance of over 120 "sunshine" countries[20] that was announced at the Paris COP21 climate summit. This alliance is a treaty-based inter-governmental organisation that promotes the efficient use of solar energy to reduce dependence on fossil fuels. It is a hope of the ISA that the wider deployment of solar will reduce the costs of production and development, facilitating the increased deployment of solar technologies to poor and remote regions. The framework agreement has been signed by 75 countries, including India and Brazil, and has been ratified by 54 countries, including India. Five ISA programmes are; Scaling solar applications for agricultural use; Affordable finance at scale; Scaling solar mini grids; Scaling rooftop solar and; Scaling Solar E-Mobility & Storage (Dawn, Tiwari, Goswami, & Mishra, 2016; ISA, 2019).

In India, the Ministry of New and Renewable Energy – Central Government (MNRE) has set a target to install 227 GW of solar by 31 March 2022. To accelerate the rate of installations in order to achieve this target, the installations of rooftop PV is incentivised by a capital subsidy offered to all residential customers as well as to customers from the institutional and social sectors.[21] The subsidy is currently set at 30 per cent of the benchmark costs as listed in Table 4 in Section 3.4. The subsidy is increased to 70 per cent of the benchmark cost in special category states.[22] The benchmark cost and subsidy levels are revised periodically. This subsidy is only available for projects up to 500 kW and are not available for commercial and industrial customers (Bijli Bachao, 2019), (Buckley, 2019). Commercial and Industrial electricity users who install rooftop PV can benefit from an accelerated depreciation benefit for tax purposes. The current rate for this is 40 per cent (ISA, 2019). Furthermore, priority sector loans for the installation of rooftop PV of up to 10 lakhs (14 540 US$) are available from nationalised banks. The financial viability of solar is further incentivised by the high electricity tariffs as well as beneficial feed in tariff regiments (also see Section 3.5), including receiving Rs 2 (0.03 US$) per unit of electricity generated and being able to sell their excess electricity at a regulated tariff (ISA, 2019).

In Brazil, the only financial incentives available for rooftop PV installations are regional solar credit line facilities and in the rooftop PV tariff regime already discussed in Section 3.5, there are currently no other financial incentive schemes available to Brazilian electricity consumers (Bradshaw & Martino, 2019) (Miranda, Szklo, & Schaeffer, 2015)

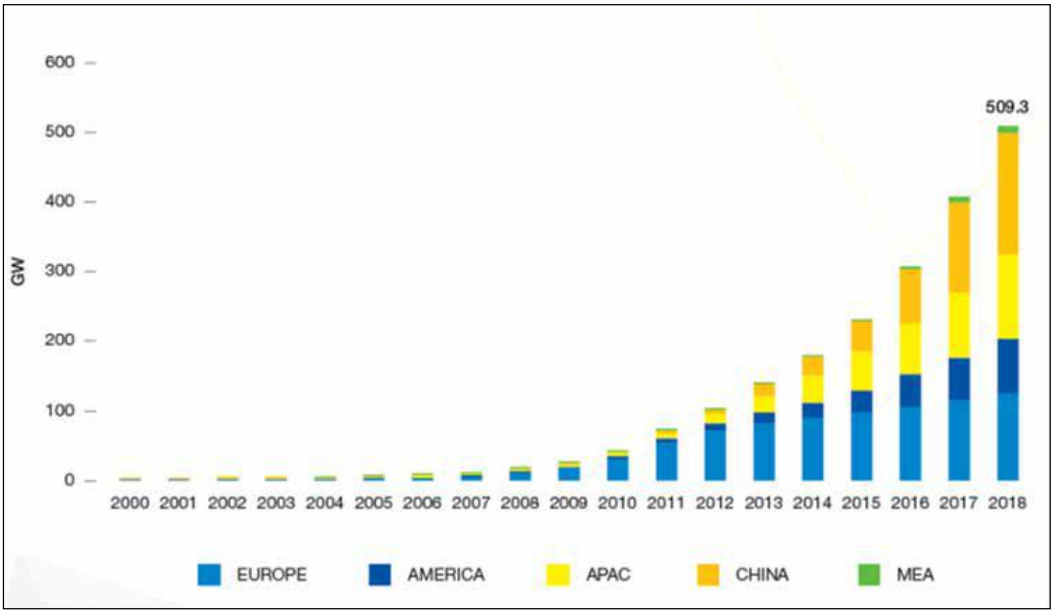
In South Africa, commercial and industrial electricity consumers can benefit from the accelerated depreciation tax incentive whereby 100 per cent of the capital cost for all PV installations can be deducted from taxable income in the year of installation. There are no other capital subsidies available. However, some RE credit lines offer technical assistance facilities and/or beneficial rates for RE installations.

PV market development and opportunities for IBSA countries

Global solar PV installations have increased at a dramatic pace in the recent past. This increase is ascribed to the falling capital cost, the availability of the technology as well as government incentives. See Figure 21.

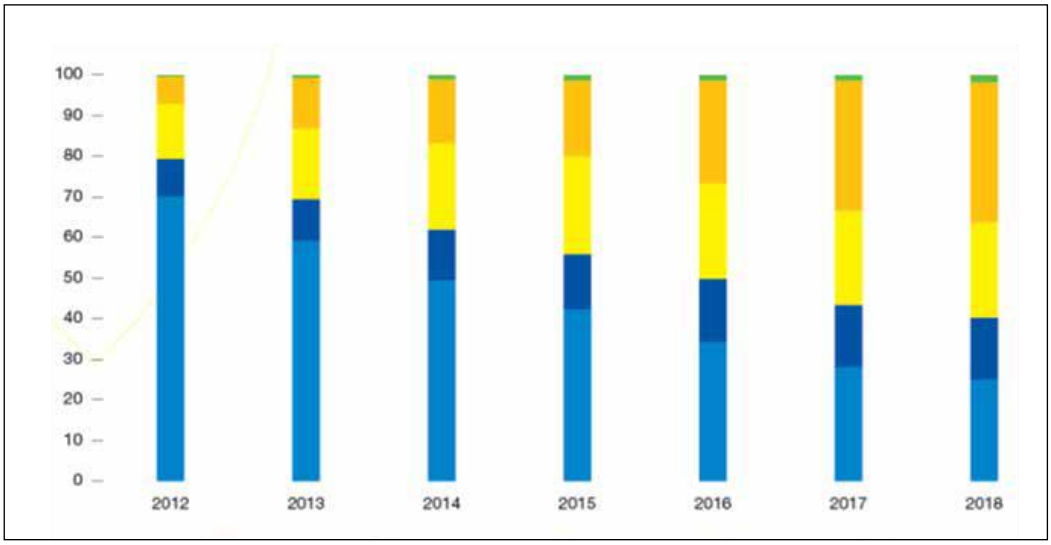
Whereas this global installation statistics was dominated by installations Europe before 2014, this has now been overtaken by the Asia-Pacific (APAC) region and China. The global region with the least installations, is the Middle East and Africa (MEA). See Figure 22.

Figure 21: Global total solar PV installed capacity 2000-2018



Source: (Schmela et al., 2019).

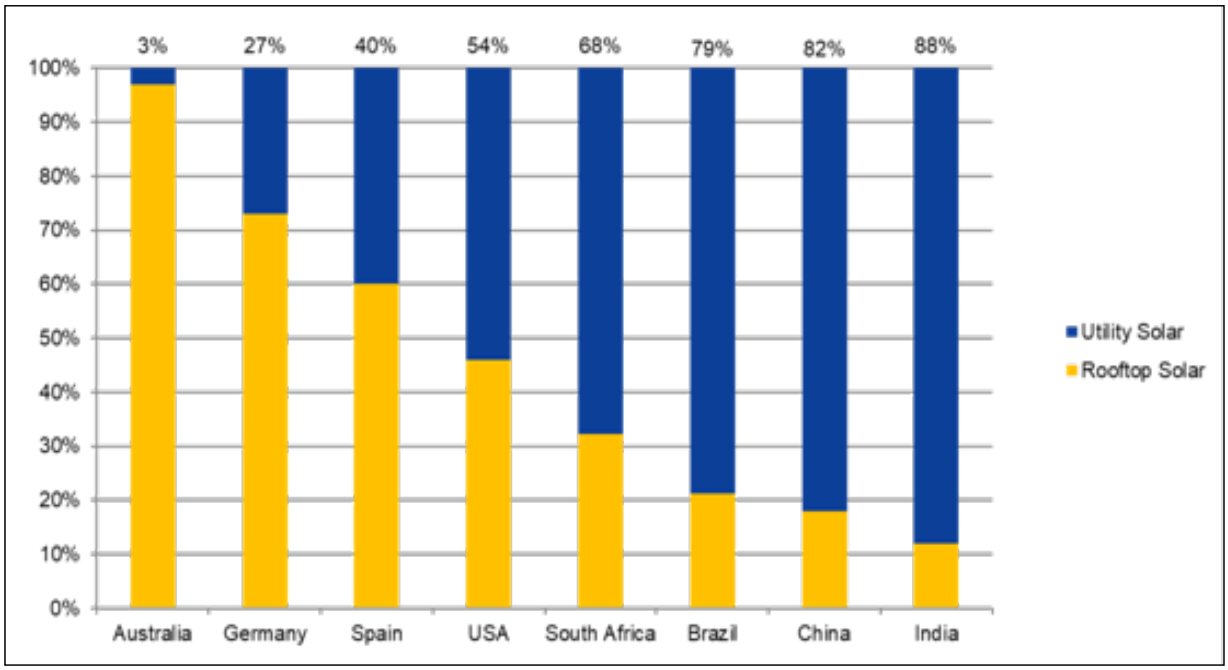
Figure 22: Global total PV installed capacity shares 2012-2018



Source: (Schmela et al., 2019).

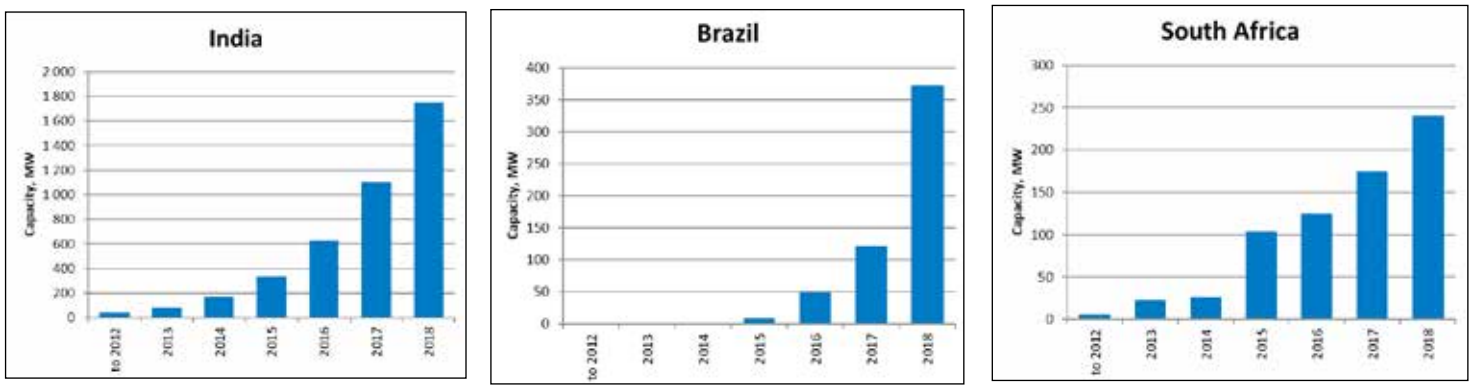
While the installed capacity of solar PV is dominated by rooftop installations in most European countries, most of the installations in the IBSA countries are at the utility scale. See Figure 23. This said, the rooftop installations in all the IBSA countries are increasing year on year, as can be seen in Figure 24.

Figure 23: Utility Scale vs rooftop solar PV installations in selected countries



Source: (AREP, 2019; Bellini, 2019a, 2019b; Bridge to India, 2017, 2019a; Trivedi et al., 2018)

Figure 24: Additional rooftop PV installed in India, Brazil and South Africa, 2012-2018



Note: Not at the same scale.

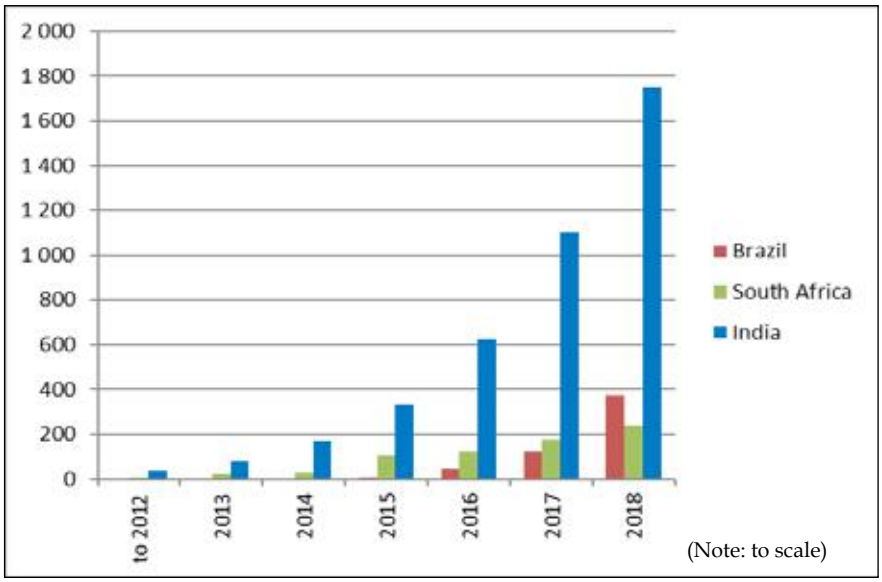
Source: Author's compilation from official sources.

The total installed rooftop PV capacity at the end of 2018 in India was estimated at 4 100 MW (Bridge to India, 2017; Trivedi et al., 2018), (Buckley, 2019), in Brazil it was estimated at 372 MW (Bellini, 2019a, 2019b; dos Santos, Canha, & Bernardon, 2018) and in South Africa it was estimated at 700 MW (AREP, 2019) See Figure 24 and Figure 25.

In India, most of the rooftop PV installations are in the industrial sector (almost 50 per cent), whereas in Brazil and South Africa, most of the installations are in the commercial sector, with 43 per cent and 71 per cent respectively. (See Figure 26).

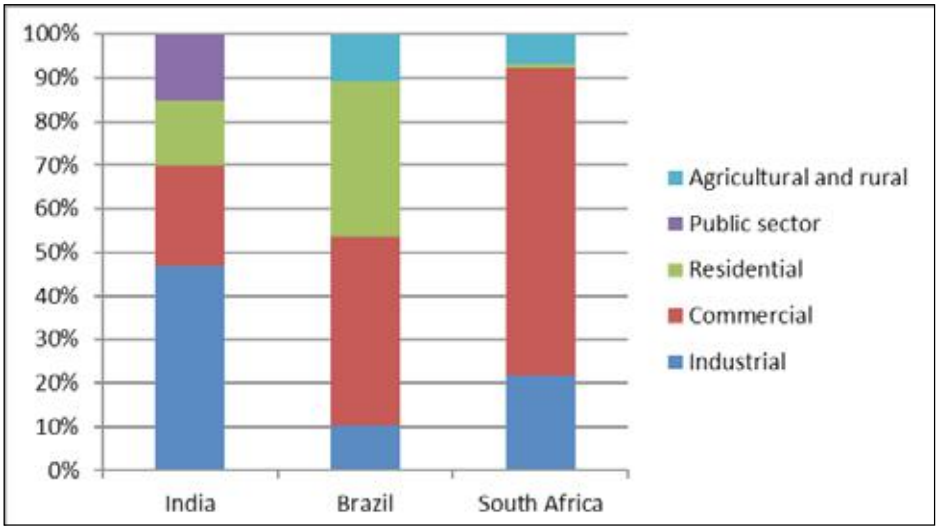
The region with the highest installed capacity of rooftop solar in India is Maharashtra, with 17 per cent. Rachistan, Tamil Nadu, Gujurat and Karnataka each make up around 10 per cent of the total capacity, followed by Karnataka, Uttar

Figure 25: Additional rooftop PV installed in the IBSA countries, 2012-2018



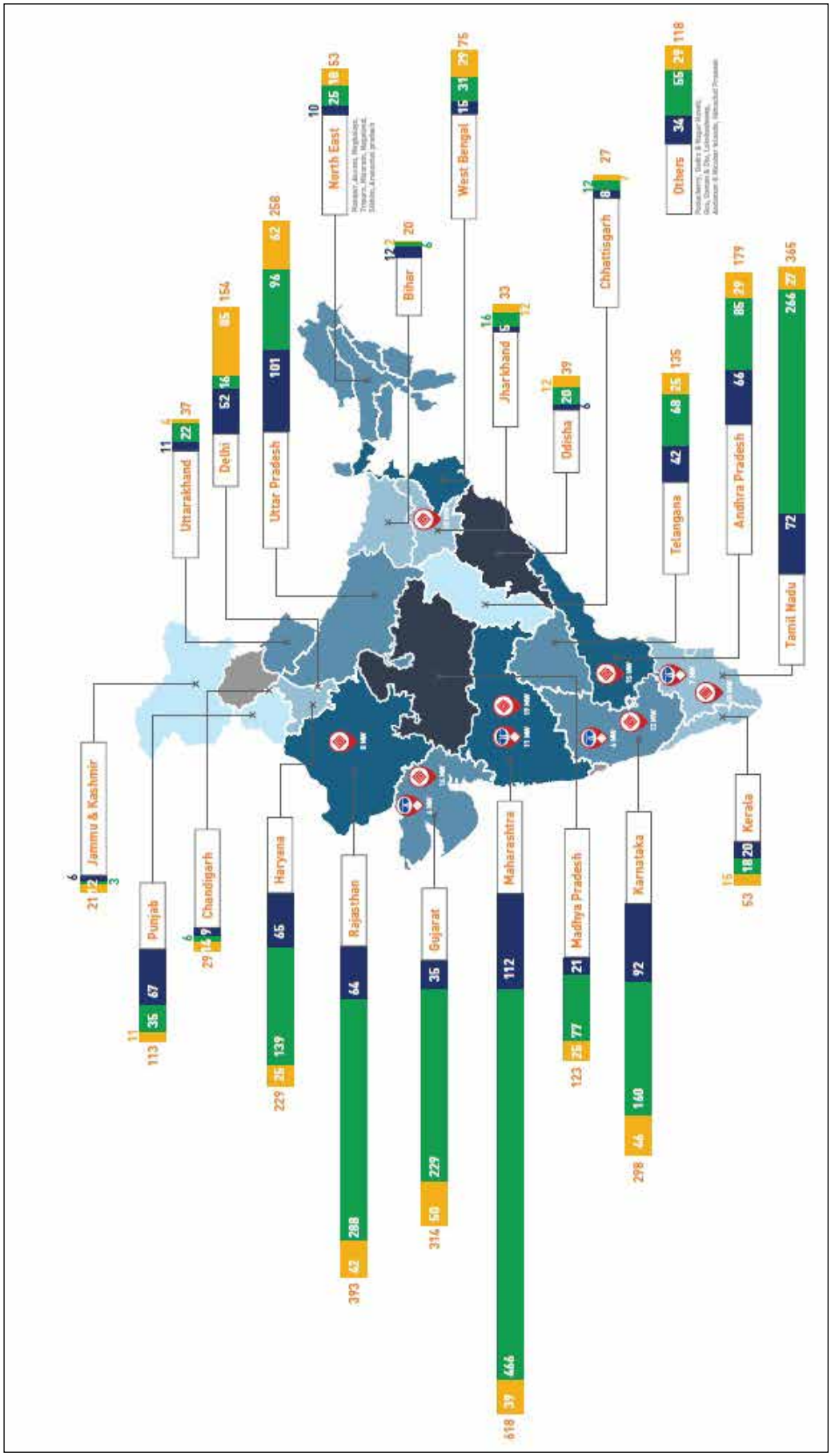
Source: Author's compilation from official sources.

Figure 26: Rooftop PV installations per sector in the IBSA countries



Source: Author's compilation from official sources.

Figure 27: Rooftop solar capacity in MW in India per region for industrial



Source: (Bridge to India, 2019b).

Note: (***dark*** blue), commercial (green) and public sector (yellow) installations by March 2019.

Pradesh, Haryana and Andra Pradesh, that all make up between 5 per cent and 10 per cent of total capacity23 (Bridge to India, 2019b). See Figure 27 and Table 5.

The state with the highest capacity of installed rooftop PV in Brazil, is Minas Gerais with almost 21 per cent, and a total of 113 MWp installed by the end of 2018. This is followed by Rio Grande do Sul with 88 MW (16 per cent) and Sao Paulo with 66 MW (12 per cent) (Greener, 2019). See Figure 28

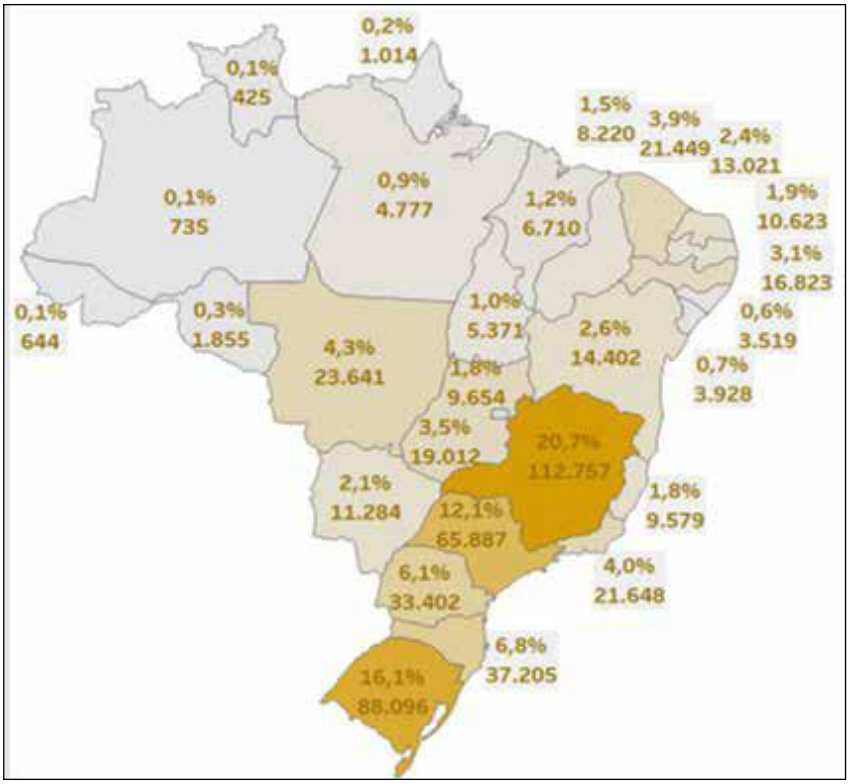
In South Africa, 44 per cent rooftop PV installations are in the Gauteng Province, followed by 18% in the Western Cape, with the other provinces all having less than 10 per cent of national installations (DoE, 2018). See Figure 29.

Table 5: Installed rooftop solar capacity per region in India for the industrial, commercial and public sectors

Region	Installed capacity in MW	% of total installed capacity in India
Maharashtra	618	17%
Rajasthan	393	11%
Tamil Nadu	365	10%
Gujarat	314	9%
Kamataka	298	8%
Uttar Pradesh	258	7%
Haryana	229	6%
Andra Pradesh	179	5%
Delhi	154	4%
Telagana	135	4%
Madya Pradesh	123	3%
Other	118	3%
Punjab	113	3%
West Bengal	75	2%
Kerala	53	1%
North East	53	1%
Odisha	39	1%
Uttarakhand	37	1%
Jharkhand	33	1%
Chandigarh	29	1%
Chhattisgarh	27	1%
Jammu and Kashmir	21	1%
Bihar	20	1%
TOTAL	3 684	

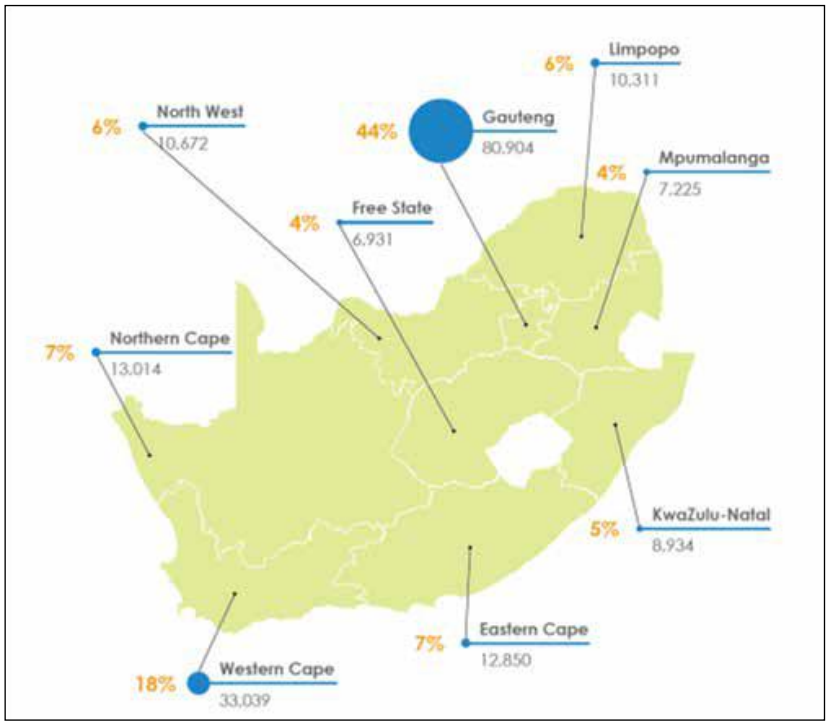
Source: (Bridge to India, 2019b).

Figure 28: Rooftop solar capacity



Source: Federal State in Brazil by December 2018 in kWp (Greener, 2019).

Figure 29: Provincial share of recorded small-scale (rooftop)



Source: Solar PV installations in South Africa (DoE, 2018)

Future outlook for rooftop PV in IBSA

The business case for rooftop solar is mainly a factor of the solar resource, the capital cost of the installation and the compensation for electricity generated, usually in the form of the electricity tariff. This has been discussed in Section 3. The current section provides the business case for rooftop solar in the IBSA countries as well as some thoughts for the future outlook.

A summary of the capital cost and the active energy charge part of residential tariffs for the IBSA countries is provided in Table 6.

Table 6: Capital costs and active energy charge in the IBSA countries

	Lowest capital cost (USD/kW)	Highest capital cost (USD/kW)	Lowest active energy charge in USD/kWh	Aggregate active energy charge in USD/kWh	Highest active energy charge in USD/kWh
India	650	900	0.02	0.09	0.21
Brazil	700	4 000	0.04	0.19	0.28
South Africa	500	2 000	0.07	0.13	0.20

Source: Author's compilation from official sources.

Based on the formula described in Section 3 and illustrated in Figure 11 in Section 3.2, the simple payback period for a few different scenarios are provided in Table 7.

Table 7: Simple payback period calculation for different capital cost / active energy charge / PV electricity generation scenarios

Capital cost (USD/kW)	Active energy charge in USD/kWh	Payback period in years for a solar resource of 1 000 kWh / kWh / year	Payback period in years for a solar resource of 1 250 kWh / kWh / year	Payback period in years for a solar resource of 1 500 kWh / kWh / year
500	0.02	25.0	20.0	16.7
500	0.10	5.0	4.0	3.3
500	0.20	2.5	2.0	1.7
800	0.02	40.0	32.0	26.7
800	0.10	8.0	6.4	5.3
800	0.20	4.0	3.2	2.7
1 100	0.02	55.0	44.0	36.7
1 100	0.10	11.0	8.8	7.3
1 100	0.20	5.5	4.4	3.7
1 400	0.02	70.0	56.0	46.7
1 400	0.10	14.0	11.2	9.3
1 400	0.20	7.0	5.6	4.7
1 700	0.02	85.0	68.0	56.7
1 700	0.10	17.0	13.6	11.3
1 700	0.20	8.5	6.8	5.7
2 000	0.02	100.0	80.0	66.7
2 000	0.10	20.0	16.0	13.3
2 000	0.20	10.0	8.0	6.7
2 300	0.02	115.0	92.0	76.7
2 300	0.10	23.0	18.4	15.3
2 300	0.20	11.5	9.2	7.7

Source: Author's compilation from official sources.

As is expected, Table 7 illustrates that the payback period is decreased with a reduction in capital cost, is decreased with an increase in annual electricity generation from PV and is decreased with an increase in the active energy charge component of the electricity tariff. Larger systems are usually lower in capital costs than smaller systems. However, larger systems are usually installed at commercial and industrial sites and the active energy charge for these customers are typically much lower than for residential customers, who are expected to pay a higher per kW capital cost.

Future outlook for the cost of rooftop PV in IBSA

As was shown in Section 3.4, the cost of rooftop solar PV installations have rapidly decreased in the recent past, due to technological advancements for PV panels as well as for inverters. Some cost reductions could also be ascribed to, labour costs due to learnings and economies of scale. However, the total cost of PV installations include the balance of system (cables, switches, brackets etc.) costs as well as legal and administrative costs. While the cost of the PV panels and inverters are still reducing, albeit at a slower rate than in the past, the "other" costs are not expected to reduce and might in fact increase over time.

As India, Brazil and South Africa import most of the key component of a rooftop PV system, the local price is affected by the exchange rate and price reductions (or price increases) could be experienced due to currency volatility.

In addition to this, the price deduction of PV technologies was mostly due to China's economic era of growth through low manufacturing costs and exports. However, China's next economic era is aimed at becoming a consumer economy. Wage increases in China could affect the price of products in the future.

Future outlook for electricity tariffs and rooftop PV in IBSA

Electricity tariffs are increasing worldwide and it is no different in the IBSA countries. Electricity tariffs are also being restructured towards more cost reflective approaches, which might lead to higher capacity charges and corresponding lower active energy charges and / or active energy charged at a time of use rate. The active energy charge part of the electricity tariff has traditionally been used by electricity utilities as an incentive mechanism for electricity saving (i.e. inclining block tariffs). This means that lower active energy charges might lead to higher electricity consumption. However, higher active energy charges might lead to a high rate of grid-defection from high income electricity customer, leaving the utility with only low income customers without the capital for electricity self-sufficiency. Also, as the most predictable future income or saving from a rooftop PV installation is from the active energy part of the electricity tariff, this change will negatively impact the financial viability of the rooftop PV installations.

This death spiral affect is illustrated with a simple system dynamic model in Figure 30. In a dynamic system, a balancing loop (indicated with a "B" in the figure) is preferable to a reinforcing loop ("R"). Most of the loops in Figure 30 are, however, reinforcing loops. In fact, the only balancing loops in the figure are; the loop that explains that as the GHG emissions of the country increases, the likelihood of incentives for rooftop PV increases, which will increase the amount of customers with PV installed, which should in turn lower GHG emissions. The other balancing loop is the one on the far right that indicates that when a utility is in financial distress, it could increase the active energy charges, which will provide more income. However, the bulk of the model is filled with reinforcing loops. For instance, the

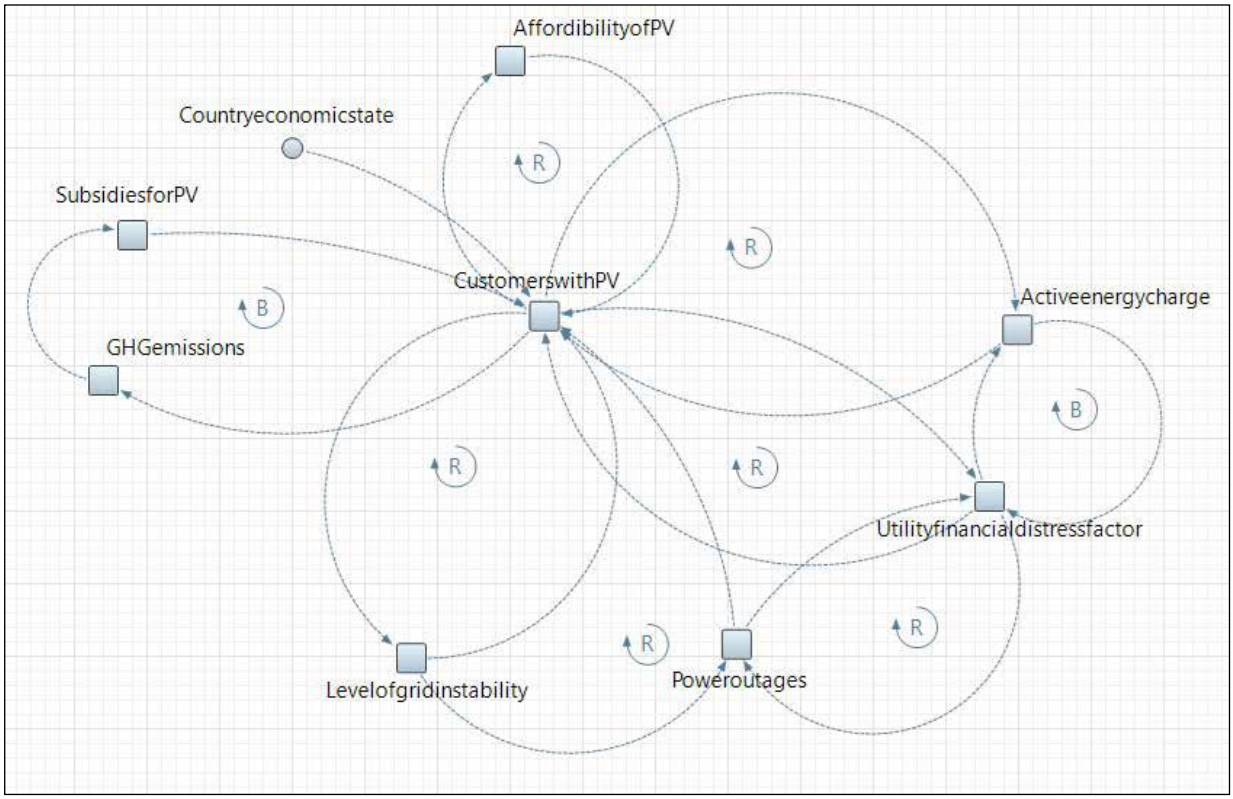
reinforcing loop at the top indicates that when more customers have rooftop PV installed, the price will come down (due to economies of scale) and this new lower price will convince more customers to install, bringing the price down more. The reinforcing loop on the bottom left indicates that when the grid is unstable, the resulting power interruptions will convince customers to install rooftop PV, which in turn will contribute to grid instability. In the same way, grid instability leads to power outages, leading to more rooftop PV installations. Frequent power outages and grid instability also lead to financial losses to the electricity utility, leading to increased tariffs, and more people installing rooftop PV.

Conclusions

Whereas the electricity generation in India and South Africa is dominated by coal fired power stations, most electricity generated in Brazil is from hydro power. The electricity demand in India and Brazil is increasing year on year, however, the electricity demand in South Africa is stable and has in fact decreased in the last ten years. The per capita electricity use in South Africa is well above global averages and in India it is well below,

Most western countries show an overwhelming dominance of rooftop PV installations when compared to utility scale PV projects. However, the statistics from the IBSA countries shows that utility scale PV in

Figure 30: System dynamic model to illustrate the "death spiral" effect of the electricity utility



Source: Author's compilation from official sources.

all three these countries dominates over rooftop PV installations. Solar PV installations have grown at a rapid rate globally. This growth is also observed in all the IBSA countries, with record numbers of rooftop PV installed in all three countries in 2018.

All three IBSA countries have a good solar resource, with most regions of these countries experiencing more sunlight per year than countries, like Germany, that have achieved a large penetration of rooftop PV.

When the electricity tariffs of the IBSA countries are compared to global electricity tariffs, the tariffs in Brazil (0.19 US$/kWh) are considered on the expensive side, the tariffs in India are considered comparatively low (0.09 US$/kWh) and those in South Africa (0.13 US$/kWh) are considered averagely priced. Feed-in tariffs or net-metering tariff structures are available to most electricity customers from all sectors in all the IBSA countries. Rooftop PV installations in Brazil are the most expensive of the IBSA countries and the installations are the cheapest in India. Capital subsidies are available to Indian residential, institutional and social sectors. Commercial and industrial customers who install rooftop PV can benefit from an accelerated depreciation regime for tax purposes. The rate for this is currently set at 100 per cent. There are no capital subsidies available in South Africa at present, but all customers except for households can benefit from accelerated depreciation for tax purposes by claiming 100 per cent of the installation cost of their new systems in the year of installation. Electricity customers in Brazil are incentivised to install rooftop PV with attractive electricity tariff regimes.

The business model for the installation of rooftop PV is mostly dependent on the solar resource, the capital cost of the installation and the applicable electricity tariff. Rooftop PV installations are cost effective for most customers in all the IBSA countries, provided that there is surety that the electricity tariff won't change in the near future.

Endnotes

1. Referring to Silicon (Si) flat-plate PV panels, the most commonly used. There are of course a number of other new and emerging PV technologies.
2. The installation of PV on the rooftop of a grid connected building is at times referred to as "going off-grid". However, it is only technically possible to disconnect from the grid when the PV is combined with a balancing technology, such as a battery storage unit or another generator.
3. The Commonwealth of Independent States (CIS) formed when the former Soviet Union (now called Russia) totally dissolved in 1991. At its conception it consisted of ten former Soviet Republics: Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.
4. 1 petawatt hour (PWh) is equal to 1 000 000 000 000 kilowatt hour (kWh)
5. This is an extra 25% of generating capacity in the country.
6. A facility that provides locally generated electricity to industrial facilities or large offices. These plants operate in parallel to the electricity grid, with the ability to export surplus power into the local electricity distribution network.
7. 1 terawatt hour (TWh) is equal to 1 000 000 000 kilowatt hour (kWh)
8. South Africa is the twenty-first highest electricity generating country in the world.
9. Investigation on the feasibility of the unbundling of Eskom are ongoing
10. This consumption could include the loading of batteries and the generation could include electricity generated by these batteries.
11. These individual loads could, of course, include energy storage.
12. This non-alignment of electricity generation and consumption can lead to electricity generation being curtailed, for instance when a coal fired or nuclear power station cannot be powered down when the electricity demand drops at night, or when the electricity generated from solar in the daytime exceeds the demand for electricity.
13. As indicated, this is a simplified, back-of-the-envelope, calculation of financial viability. There are many other factors that also influence the payback period, including finance costs, maintenance costs, panel degradation, replacement of inverters and insurance fees and it is important to do a detailed feasibility study before making an investment decision.
14. All costs listed here in USD per kWp AC.
15. The exchange rate is taken at 68,55 INR to 1 USD
16. The exchange rate is taken at 3,75 BRL to 1 USD
17. The exchange rate is taken at 13,98 ZAR to 1 USD.

18. 1 USD = 0.26668 Brazilian Real = 0.01454 Indian Rupees = 0.0715 South African Rand
19. Program of Social Integration (PIS), Public Service Employee Fund (PASEP) and Contribution for the Financing of Social Security (COFIN)
20. These countries are mostly located either completely or partly between the Tropic of Cancer and the Tropic of Capricorn.
21. Residential: All types of residential buildings; Institutional: Schools, health institutions including medical colleges and hospitals, educational institutes (both public and private), R&D institutions, etc.; Government Buildings; Social Sector: Community Center, Welfare homes, old age homes, orphanages, etc.
22. The special category states are; Andaman and Nicobar Islands, Arunachal Pradesh, Assam, Himachal Pradesh, Jammu And Kashmir, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and Uttarakhand.
23. Residential installations are not included in this data

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SPECIAL ARTICLE

6

Overview of the IBSA Fund

Beena Pandey*

Introduction

The genesis of establishing India-Brazil-South Africa Trilateral Cooperation Forum (IBSA) goes back to the discussions between the then Prime Minister of India and the then Presidents of Brazil and South Africa in Evian held on 2 June 2003 on the margins of G-8 Summit. IBSA is a unique forum which brings together these three large democracies and major economies from three different continents. All these countries are multi-ethnic, multi-cultural and multi religious democracies. The establishment of IBSA was formalised by the Brasilia Declaration, 2003 which led to the adoption of IBSA Dialogue Forum at the behest of India, Brazil and South Africa, which is an international trilateral development initiative for promoting South-South Cooperation among these countries.

Interestingly, it has a unique mechanism of trilateral cooperation as a forum for consultation and coordination on global and regional political issues. As a distinctive feature, it also trilaterally collaborates on concrete areas and projects through Working Groups and People-to-People Forums. It also assists other developing countries through development projects financed by IBSA Fund.

After establishment of IBSA in 2004, IBSA Fund became operational in 2006 to support projects on a demand driven basis through partnerships with local governments, national institutions and implementing partners. Till date with a cumulative contribution of US$ 37.3 million, the fund has partnered with 21 developing countries and has implemented 33 projects. Annually, each member country of IBSA contribute US$ 1 million to the IBSA Fund which is used for poverty alleviation projects in developing countries.

According to UNOSSC 2018 report on IBSA Projects, the geographic distribution of funds shows that Africa heads the list of regions which received 37 per cent of IBSA Fund contributions, followed by Latin America and Caribbean countries (24.5 per

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cent), Asia and the Pacific (20.9 per cent), Arab states (15.1 per cent) and other global countries (2.5 per cent). Almost, two third of the total budget, i.e 64 per cent, is invested in the least developed countries while the rest 36 per cent received by other developing countries. Similarly, if we assess the fund contribution sector wise, the total budget mainly caters to agriculture (34.2 per cent), employment and livelihoods (21.2 per cent), health (20.9 per cent), water and sanitation (10.0 per cent), youth engagement (3.2 per cent), education and governance (3 per cent), energy (1.8 per cent) and other allied areas (2.5 per cent).

Completed Projects

As far as completed projects are concerned, they ranged from strengthening infrastructure, capacity building to combat HIV/AIDS in Burundi, delivering safe drinking water and refurbishment of health care infrastructure in Cabo Verde, empowering children and adolescents with special needs and their families in Cambodia. In Guinea-Bissau, four projects related to development of agriculture, livestock processing and rural electrification were completed. Project related to collection of solid waste, as a tool to reduce violence in Haiti, and support to integrated irrigated agriculture in two districts of Bolikhamxay in Lao PDR, have shown positive outcomes in terms of better living. In the State of Palestine, projects related to recreation sports, reconstruction of Atta Habib Centre and rehabilitation of cultural and hospital centres catered to the achievement of SDGs 3 related to healthcare activities. Similarly, in Vietnam an establishment of a rice-seed production in Hub in Hoa Tien contributed to enhance agricultural yields, improved local farmer's livelihoods and thereby proved effective in reducing poverty and hunger among communities in the area.

Ongoing Projects

Besides the above mentioned completed projects, as per the IBSA project report 2018, there were nine projects shown as ongoing with varying period and completion dates. Most of them were expected to have completed by 2018/2019, except one project in Fiji which is continuing till October 2020. It is presumed that these projects must have been completed with possible expected outcomes as per the aims and objectives of the respective projects. Apart from these ongoing projects, there are five other approved projects according to the latest report.

Cambodia

In Cambodia a two year project (July 2017- June 2019) was initiated to improve the employability of Cambodian youths through enhancing their technical skills development. In collaboration with the Ministry of Education, Youth and Sports, Cambodia Volunteering Network and United Nations Volunteers, this project with an approved budget of $961,200 contributed to achieve SDG 8 related to decent work and economic growth. From July 2017 to October 2018, the project mobilised 15 UN Volunteers onsite, eight volunteers online and 1438 other volunteers. During this period, ten knowledge projects were produced, through which 15,792 participants were benefitted. The project aspired to change the perception of employers and the general public towards volunteerism that impacted positively on the lives of thousands of youths. As a result, youths were equipped with necessary skills such as communication international, problem-solving, teamwork, presentation, leadership, time management and resource mobilisation skills that are meant to transferable to the job market. (unv.org/success-stories)

Comoros

Likewise, a two-year project (July 2017-August 2019) with an approved budget of $1,800,000, was undertaken for enhancement of agricultural capacity in Comoros in partnership with South Africa Agricultural Research Council and UNDP Comoros to improve the production conditions and commercialisation of agricultural products

on the island of Moheli. This project aimed at contributing to achieve Zero Hunger in consonance with SDG 2.

Fiji

Further, as per the ongoing project with an approved budget of around $275,525 for a period of three years, is expected to be completed by October 2020. The main objective is to improve the health of rural women in Fiji through scaling up of the rocket stoves for cooking, will directly contribute in achieving the SDG 2 and 5. With multiple partners like Ministry of Women, Children and Poverty Alleviation, Adventist Development and Relief Agency (ADRA), Fiji Community Centre and Conservation, Fiji, Gender Climate Change Alliance Fiji Ltd., Grace Trifam Ministry, GEF, Small Grants Programme and UNOPS Fiji, the project is expected to change the lives of women from health hazards. The most unique features of these stoves are that they are built with locally available resources and use very small quantity of wood and produce clean flames with no smoke at all and is considered to be very safe mode of cooking for women.

Guyana

Solid waste management improvement project in Guyana was started in collaboration with Ministry of Communities, UNDP Guyana with an annual budget of $1,093,260 for a period of four years (April 2014-September 2018). In order to improve the deplorable situation of urban sanitation, the project aimed to equipped local Government with waste collection trucks and excavators to provide alternative solutions to illegal vending. Furthermore, the project also aimed to create awareness in schools, along with distribution of dustbins and posters to develop a national communication strategy on solid waste management. With these measures, there has been significant improvement in the sanitary conditions of municipalities. This project is directly linked to SDG 12 pertaining to responsible consumption and production.

Haiti

A two-year project (July 2015-September 2017) to promote the socio-economic integration of vulnerable children and youth in Haiti was launched in partnership with Ministry of Social Affairs and Labour, Viva Rio and ILO Haiti with an approved budget of $ 1,555,460. Under this project a very bold initiative was undertaken to improve the employability of vulnerable youth through professional trainings, entrepreneurship, job placement in Bel Air and Cite Soleil neighbourhood in Port-au-Prince. With such facilities, the youths in Haiti have been placed as interns, apprentices an even in regular employment in formal and informal enterprises. In this endeavour, the project has strengthened the capacity of the National Institute of Vocational Training (INFP) and other training centres which were able to develop manuals on masonry, carpentry, painting, sanitation and environment. In this regard, the project was successful in enhancing the labour productivity and employability of the youths.

Saint Lucia

A three-year project (June 2015-September 2018) with an approved budget of $1,291,100 in Saint Lucia on poverty reduction through livestock development was launched in collaboration with Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Cooperatives; and FAO Saint Lucia. Under this project, the Beausejour Agricultural Station (BAS) was established as a National Centre of Excellence for imparting viable technologies and best practices in livestock production and management to enable farmers to become more productive, thereby strengthened the technical capacities of livestock farmers organisations, extension officers and veterinarians. Under the project, three farmer field schools, one on small ruminants, one on swine and the third on poultry gave practical knowledge to the farmers in a practical setting.

Sudan

In Sudan, IBSA Fund initiated a three-year project (March 2014-August 2017) on creation of job opportunities for youths through labour-intensive work opportunities with an approved budget of $1,300,000 for unskilled and semi-skilled labours. This project has been partnered with Ministry of Labour and Administrative Reform, Ministry of Youth and Sports, Ministry of International and Cooperation Khartoum State and UNDP Sudan. Under the project, unemployed and under privileged youths sought their engagements in apprenticeships for on-the-job skills training, and were also placed in public and private enterprises in road maintenance, waste management sectors, auto-mechanical, electrical and other vocational activities. To overcome the issues of unemployment in Sudan this project fulfills the mandate of SDG 8 pertaining to decent work and economic growth. As the project piloted in Khartoum State, it focused on training local labour resources and established a labour based Coordination Unit coordinated labour demand works that created synergies between government institutions, labour contractors, business groups and youth organisations to enhance the impact of collective interventions.

Timor-Leste

In Timor-Leste, a three-year (July 2015-June 2018) comprehensive project worth $1,428,772 was launched in cooperation with Ministry of Agriculture and Fisheries, NaTerra Association, Conservation International, FAO Timor-Leste to adopt sustainable production techniques for small holder farming and fishing to improve security in the country. Fishermen and local farmers were trained in rainwater harvesting, agro-forestry, permaculture and integrated fisheries and food processing technologies. With such initiatives, this project improved both the nutritional and livelihood aspects of the fishermen and farmers. Under this programme large number of school students, teachers and women in the targeted groups, benefitted in terms of their increased awareness of sustainable food production and the importance of diversified diets. An Action Plan for a Hunger and Malnutrition free country has been directly linked with SDG 2.

Vietnam

A three-year project (June 2015-December 2018) on an innovative e-learning approach for health to provide health care services in the northern coastal of Vietnam was launched in collaboration with Ministry of Health, Hai Phong University of Medicine and Pharmacy (HPUMP), and WHO Vietnam with an approved budget of $990,000. Under the project, e-modules were developed to enhance the capacity building of medical students and health professionals working in under-serviced regions mainly for controlling the non-communicable diseases and marine medicines. In order to improve the service delivery of e-learning courses in remote sites a technical exchange was carried out between HPUMP and the Apollo Telemedicine Foundation of India.

Recently Approved Projects

Among the newly approved projects, a project related to access to water to ranchers' associations and indigenous farming communities, to improve their livestock production, livelihoods and food security in Bolivia, was launched in March 2018 to increase their resilience against droughts. To overcome the problem of droughts, initially digging of water wells was also planned. Similarly, a National Health Insurance Scheme Support Project in Grenada was approved to support the national health insurance to provide health care services to its citizens.

In Kiribati, a project related to enhancement of the livelihoods of small-scale farmers engaged in coconut production, digital financial services project in Sierra Leone to promote the digital financial service products like savings,

mobile credit, insurance and financial literacy among women, youths and MSMEs.

Likewise, in Zambia, leveraging agro-industry potential in rural areas was recently launched in May 2018 to increase the productivity, capacity and rural households engaged in Soya Bean production and processing were recently approved projects, by now they must have been launched in these respective countries.

In 2019, a new IBSA project Palau Education Revitalisation was initiated with the support from Ministry of Education to flag the year 2019 as the Year of Education. The project aims to provide safe transportation and infrastructure to enable a healthy learning environment to both students and teachers. Under this project, provisions to provide school bus, fiberglass boat, teacher training facility, a High School Resource Centre along with ten new roofs in elementary schools are planned.

Way Forward

Complimenting the performance of IBSA Fund, in a meeting in 2019 in New York, Mr. Jorge Chediek, Envoy of the Secretary General on South-South Cooperation and Director of UNOSSC commented that "the IBSA Fund makes all of us very proud and I have total commitment to its success. I want to commend the generosity of India, Brazil and South Africa, three great democracies of the South coming together with a mechanism that is both effective and efficient."

This trilateral cooperation aims to be genuinely committed to improve the common lives of the people in developing countries by initiating projects pertaining to poverty reduction, food security, health, education, agriculture and livelihoods demonstrate the holistic spirit of working together for the betterment of the mankind. However, to maintain the continuity of the IBSA funding for the projects and its effective utilisation as per the mandate of IBSA, it should be ensured that the contribution of the partner countries is regularly received. There should also be a provision for periodic enhancement in the funding after undertaking an objective assessment of utilisation of the fund and the consequent benefits to the user country, where the fund has been committed and invested.

Further, the existing mechanism for reviewing the progress made and the benefits accrued to the beneficiary/government/country need to be strengthened with appropriate regular and periodic reviews. It is high time that the IBSA Forum should make more concerted efforts for expanding its activities by taking similar such initiatives. Needless to mention regular and periodic meeting and follow-up action is a pre-requisite for an effective functioning of IBSA Forum for accomplishing its objectives for which it was formed.

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DECLARATION

The Sixth IBSA Academic Forum, held at Kochi, India, highlighted the enduring relevance of the foundational charter of IBSA, emerging from the 2003 Brasilia Declaration which stood in favour of democracy, equity and multi-polarity, and advancing the social, political and cultural aspirations of its people.

The Academic Forum appreciated the new efforts made by the respective Governments to rejuvenate IBSA and associated fora. It contemplated on the vision and journey of IBSA, particularly in the context of contemporary global dynamics, and concluded that IBSA offers a progressive way forward.

Greater Relevance of IBSA

- The Forum deliberated upon the persistent shortcomings in the larger Global Governance architecture, and the emerging global challenges. The Forum, in this context, discussed at length, the reforms that are needed at the multilateral level.
- The role of IBSA was explored in detail with regard to its unwavering commitment to multilateralism, its crucial role in promoting world peace and security, and mainstreaming sustainable development. It also explored IBSA's potential to influence setting new norms, and promoting inclusivity in global governance so as to include the voice of developing countries.
- However, it was noted that the global context in which IBSA operates at the present juncture is different from the time of its formation.
- In this regard, the Academic Forum recommends the early convening of an IBSA Summit.

IBSA for UN Reforms

- The collective response from this platform suggests that IBSA was and remains relevant for a variety of reasons that make it distinct from several other country groupings. These features include the basic character of emerging, large, plural and constitutional democracies with faith in the global rule of law.
- There is potential scope for enhanced cooperation for democratisation of the UN among others. It was felt that substantive reforms at the UN Security Council would come from the real efforts of IBSA. To realise this mandate, the Academic Forum calls for stronger and continued engagement by the three countries in IBSA.

SSC, IBSA Fund, SDGs

- The forum reiterated that the edifice of the IBSA partnership stands on strong pillars of
- South-South Cooperation.
- IBSA's deep roots in SSC are reflected in the creation of the IBSA Trust Fund. The Academic Forum foremost recommended the significant enhancement of financial commitments to the IBSA Fund to increase its reach and scale.
- The Forum discussed the recently adopted BAPA+40 Declaration and felt that the IBSA countries may take a global lead in implementing the declaration in the true spirit of promoting South-South Cooperation. With the rich experience of individually contributing to development cooperation, IBSA support for partner developing countries under the principles of SSC would stand for plurality of approaches and convergence of modalities.
- IBSA has the potential to actively facilitate SSC discourse and promote wider partnerships across actors in civil society and the private sector. The three countries should work together to promote a Southern view of international cooperation that recognises the specifics and the importance of the efforts made by Southern countries to promote a more sustainable and equitable development.
- The Academic Forum appreciated the milestone IBSA Declaration of SSC in 2018, which was widely recognised and celebrated at the recently concluded BAPA+40. The Forum recommended that IBSA make special efforts to document, highlight and popularise the success of the IBSA Trust Fund and evolve new avenues of partnership. Such efforts should be backed by IBSA countries' commitment to additional resources for the Fund and to promote plurality of development interventions and outcomes.
- The Agenda 2030 of the UN is a common vision. The IBSA countries have adopted transformative national policies in the past and in the present to fulfil the global goals (earlier in the MDG era and now in the context of SDGs). IBSA must strive to ensure that the natural manoeuvring space with regard to domestic policy choices on SDGs is retained and showcase the success of domestic interventions. This should also include the projects undertaken under the IBSA Fund that are expected to contribute to the implementation of SDGs in partner countries, particularly the LDCs.

Cooperation in the Field of Higher Education and Research

- The Forum noted that IBSA countries have a long history of premier and prestigious institutions of higher learning and that these institutions need to be connected and leveraged to evolve new academic paradigms advancing Southern perspectives on development discourse,

liberal democracies, pluralistic societies and vibrant civil societies that IBSA countries are known for.

- This may be a necessary step to strengthen the creation of knowledge contextualised around Southern perspectives, rather than those rooted in colonial legacy; and
- promoting people-centred development models that may address rising inequalities in economic opportunities and inadequacies of political systems nationally and globally.
- The Forum recommended academic collaboration (joint research and exchange programmes) in a number of new areas that are important to IBSA, including among others human security, renewable energy and green technologies, blue economy and ocean governance.
- The Forum also explored the possibility of promoting student/faculty exchange and dual/triple degrees in selected programmes in IBSA universities.. It was suggested that the IBSA Academic Forum may consider constituting a task force with selected members to make concrete proposals in this regard.

IBSA, Multilateralism and Trade

- The Forum highlighted that IBSA's faith in multilateralism is at the core of its origin and subsequent engagement. IBSA as middle powers can only consolidate their emergence through multilateralism. However, at a time when multilateralism is under tremendous stress, it is pertinent for IBSA countries to coordinate their efforts once again to jointly respond to the proposals on reforming the WTO, to address pending issues of concern on development, preserve the space of special and differential treatment and highlight collective positions on the new issues and proposals of procedural reforms at the WTO including the Dispute Settlement Mechanism.
- IBSA should effectively coordinate on the nature and scope of multilateralism that suits its vision, needs and aspirations with regard to equity in global governance, including tackling lasting challenges like climate change and imbalances in resource flows including technology.
- Achieving larger intra-IBSA trade volumes has been a long-standing aspiration of IBSA. Empirical evidence strongly supports the view that IBSA countries are embedded in regional economic cooperation frameworks and the cumulative potential of intra-regional trade covering IBSA countries is many times higher than intra-IBSA trade on its own. The Academic Forum observed that IBSA countries would benefit from preferential trade among their respective regions.
- The Forum also observed that with improved coordination on standards, rules and procedures and expansion of concessional treatment, investment promotion in IBSA may be strongly pursued. The Forum recommended that such efforts should also focus on trade in services.
- IBSA should make special efforts to deepen integration in financial services and banking cooperation to strengthen the economic partnership. IBSA countries should also collaborate on global norm-setting in the financial services and banking sectors and promote technological self-reliance in associated technologies.
- Finally, the Forum proposes the continuity of this Academic Forum annually. The intervening period should be used for collaborative studies, duly supplemented by the high quality academic output by the IBSA Fellows.

AGENDA

2 May 2019	
19.30	**Welcome Dinner**
3 May 2019 (First Day)	
09.00-09.30	Registration
09.30-10.15	**Inaugural Session**
	Welcome Remarks and Context Setting: Professor Sachin Chaturvedi, *Director General, Research and Information System for Developing Countries (RIS)* **Chair: Amb. Sunil Lal**, *Former Indian Ambassador to Brazil* **Remarks by** Representative Institution, Brazil **Remarks by** Representative Institution, South Africa **Inaugural Address: Shri T.S. Tirumurti**, *Secretary (ER), Ministry of External Affairs, Government of India* Rapporteur: Ms. Karin Kritzinger, IBSA Fellow, South Africa

10.30-12.30	**Panel Discussion on Contemporary Global Governance and the Role of IBSA**
Key issues: *Promoting IBSA core principles of plurality, democracy and faith in multilateralism as part of the global narrative.*	**Chair: Amb. Rajiv Kumar Bhatia**, *Former Director General, Indian Council of World Affairs (ICWA), India* **Panelists:** **Professor William Gumede**, *School of Governance, University of the Witwatersrand, Johannesburg, South Africa* **Professor Uallace Moreira Lima**, *Universidade Federal da Bahia (UFBA), and Visiting Researcher, Brazilian Institute for Applied Economic Research (IPEA), Brazil* **Professor Sreeram Chaulia,** *Dean, Jindal School of International Affairs (JSIA); Executive Director of the Centre for Global Governance and Policy(CGGP), JSIA, India* **Lead Discussant: Professor Narnia Bohler-Muller**, *Executive Director, Human Sciences Research Council (HSRC), Pretoria, South Africa* **Open Discussion** Rapporteur: Dr. Poliana Belisario Zorzal, IBSA Fellow, Brazil
12.30-13.30	**Lunch**
13.30-15.30	**Plenary Session I: Strengthening South-South Cooperation (SSC) through IBSA**
Key issues: *SSC as foundation for IBSA, its principles and modalities and adoption of the IBSA Declaration on SSC* *Way Forward for SSC under IBSA in the context of BAPA+40*	**Chair: Mr José Romero Pereira Júnior**, *Coordinator, International Relations Program, Catholic University of Brasilia (UCB) and Researcher, Brazilian Institute for Applied Economic Research (IPEA), Brazil* **Panelists:** **Professor Milindo Chakrabarti,** *Visiting Fellow, RIS, India* **Professor Elizabeth Sidiropolous**, *Chief Executive, South African Institute of International Affairs (SAIIA), South Africa* **Dr. Elen De Paula Bueno,** *University of Sao Paulo (USP), Brazil* **Lead Discussant: Professor S. K. Mohanty**, *RIS, India* **Open Discussion** Rapporteur: Ms. Alice Pulliero, IBSA Fellow, Brazil
15.30-15.45	Tea
15.45-17.30	**Special Session: Towards a Collaborative Academic Network among Institutions of Higher Learning in IBSA Countries – Opportunities and Potential Gains**
Key issues: *Heritage of prestigious centres of learning in IBSA – yet low level of academic collaboration* *Need to create new networks and joint research*	**Chair: Professor Anuradha Chenoy,** *Chairperson, Forum for Indian Development Cooperation (FIDC), and formerly Dean, School of International Studies, Jawaharlal Nehru University, India* **Panelists:** **Professor Ahmed Bawa**, *Chief Executive Officer of Universities South Africa (USAf), South Africa* **Professor A. Subramanyam Raju,** *Coordinator, Centre for Maritime Studies, School of Social Sciences & International Studies, Pondicherry University, India*

Academic exchanges, fellowships to strengthen people-to-people partnerships *Uphold IBSA ideals of liberal democracy and pluralism through academic partnerships and exchange*	**Mr José Romero Pereira Júnior**, *Coordinator, International Relations Program, Catholic University of Brasilia (UCB) and Researcher, Brazilian Institute for Applied Economic Research (IPEA), Brazil* **Lead Discussant: Professor Sreeram Chaulia,** *Dean, Jindal School of International Affairs (JSIA); Executive Director of the Centre for Global Governance and Policy(CGGP), JSIA, India* **Open Discussion** Rapporteur: Ms. Rabia Khatun, IBSA Fellow, India
17.30-18.00	**Interaction with IBSA Fellows**
4 May 2019 (Second Day)	
10.00-12.00	**Plenary Session II: Trade Cooperation: Competitiveness and Complementarities**
Key issues: *Trade and investment cooperation for inclusive development* *Competitiveness, SMEs and value chains* *Industry 4.0: opportunities and challenges for IBSA*	**Chair: Professor Elizabeth Sidiropolous**, *Chief Executive, South African Institute of International Affairs (SAIIA), South Africa* **Panelists:** **Professor S. K. Mohanty**, *RIS, India* **Professor Rasigan Maharajah**, *Chief Director Institute for Economic Research on Innovation, Tshwane University of Technology, Pretoria, South Africa* **Professor Uallace Moreira Lima**, *Universidade Federal da Bahia (UFBA), and Visiting Researcher, Brazilian Institute for Applied Economic Research (IPEA), Brazil* **Lead discussant: Professor K. J. Joseph,** *Centre for Development Studies, India* **Open Discussion** Rapporteur: Mr. Kamlesh Goyal, IBSA Fellow, India
12.00-13.00	**Valedictory Session: IBSA 2030 – The Way Forward**
	Chair: Mr. Sheshadri Chari, *Member, Governing Council, RIS, India* **Rapporteur's Report: Dr. Sabyasachi Saha**, *Assistant Professor, RIS and Faculty Coordinator, IBSA Fellowship Programme* **Comments by** Representative Institution, Brazil **Comments by** Representative Institution, South Africa **Closing Remarks: Professor Sachin Chaturvedi**, *Director General, RIS*
13.00-14.00	Lunch
14.30	Departure for Hotel Taj Malabar
15.30-17.30	**Interaction with IBSA Sherpas at Hotel Taj Malabar**


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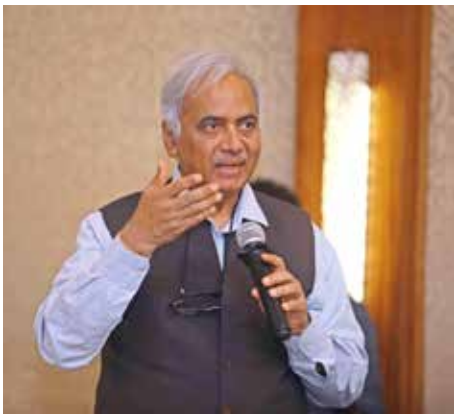


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Tweetspeak

RIS @RIS_NewDelhi · May 4, 2019
Presentation of #ActionAgenda emerging from #IBSAAcademicForum by @seshadrichari at #IBSA Dialogue Forum Meeting of Sherpas

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#IBSA is and continues to be relevant, #democratic foundations, fulfilling aspirations of people and articulation at the global level, development as core of multilateralism, and future of multilateralism @TSTirumurti #Secretary(ER) @MEAIndia #InauguralAddress

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Plenary Session II: Trade Cooperation - #Competitiveness and complementarities led by @Siderop joined by #SKMohanty #RasiganMaharajah #UllaceMoreiraLima #KJJoseph

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In a short while @MEAIndia @TSTirumurti @DIRCO_ZA @AmbMoKumar @SenseandC_sense @Sachin_Chat

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